MANITOBA PERINATAL HEALTH SURVEILLANCE REPORT 1989-1998

Provincial And Winnipeg Geographic Breakdown

Manitoba Health
Public Health Branch
Epidemiology Unit
Perinatal Project Team

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Manitoba Perinatal Health Surveillance Report:

Geographic Breakdown – Regional Health Authorities Community Characterization Areas Neighbourhood Resource Networks

1989 - 1998

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We are pleased to release this second Provincial Perinatal Health Surveillance Report, which is the result of work undertaken by the Manitoba Health Epidemiology Unit: Perinatal Project Team. This report focuses on presenting perinatal health indicators according to geographic boundaries: Regional Health Authorities (RHAs) for the Province as a whole, and Community Characterization Areas (CCAs) and Neighbourhood Resource Networks (NRNs) within the City of Winnipeg.

This surveillance report continues to use a conceptual framework that identifies four key areas influencing perinatal health, that is, maternal health, maternal care, newborn care and infant care. Within that context, various aspects of perinatal health and care practices are described from a provincial perspective for the period from 1989 to 1998.

The Perinatal Project Team will continue to work collaboratively with other stakeholders to enhance the available sources of perinatal health data, and to promote important research in this area.

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We would also like to acknowledge and thank the members of the Perinatal Project Team for their valuable advice regarding the content and interpretation of the data contained in the report.

CHAPTER ONE

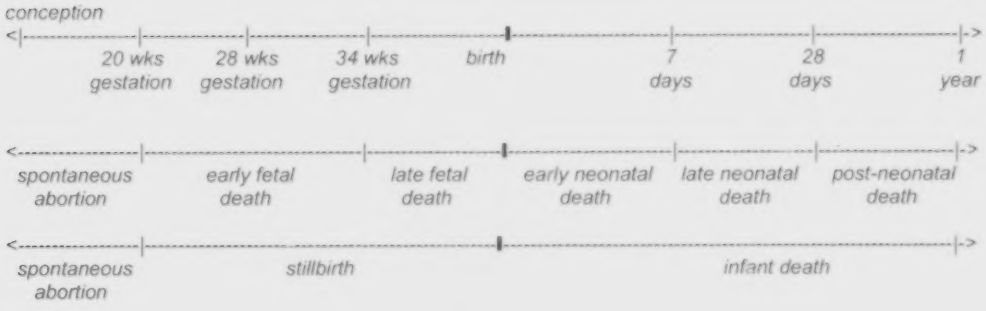
INTRODUCTION

Introduction

In 1996, the Epidemiology Unit of Manitoba Health established a collaborative project team to assess perinatal health in Manitoba. The membership of the Perinatal Project Team is listed in Appendix D. A priority of this Team has been the development and implementation of a Manitoba Perinatal Surveillance System. Epidemiologic surveillance is the collection, analysis, interpretation, and dissemination of information on health-related events in a population. Since it is used for the ongoing monitoring of health-related events, a surveillance system should be adaptable, responsive, cost effective, and simple. Consequently, surveillance systems are generally used to describe what is happening in a population rather than determining the causes of these events.

Although the perinatal period can be defined in various ways, the Perinatal Project Team decided that the scope of perinatal surveillance should include events occurring from conception through the first year of life.

Feto-Infant Time Line



The first report of the Manitoba Perinatal Surveillance System presented data from 1985 to 1996 ("Manitoba Perinatal Surveillance Report: 1985-1996") and is available from the Epidemiology Unit, Manitoba Health or on the Web (http://www.gov.mb.ca/health/publichealth/epiunit/reports.html)

This second report presents data from 1989-1998, with a focus on presenting perinatal health indicators according to geographic boundaries [Regional Health Authorities (Figure 1.1) for the whole Province and Community Characterization Areas (Figure 1.2) and Neighbourhood Resource Networks (Figure 1.3) within the City of Winnipeg]. All of the data used for this report came from existing Manitoba Health and Manitoba Vital Statistics databases. Consequently, limitations in these data sources have influenced the scope and depth of our analyses. In particular, with respect to pregnancies, this report only identifies those pregnancies that have resulted in a hospital-based outcome. Therefore, home births, spontaneous abortions not requiring hospital admission, and induced abortions occurring in private clinics are excluded.

Also, this report only refers to women who are residents of Manitoba and does not include women from other provinces who delivered in Manitoba.

In all of the analyses, with the exception of some Maternal Care indicators, we present data according to the mother's area of residence, which may differ from the geographic region of the hospital in which a pregnancy outcome occurred. As well, throughout the report, it is important to note that all rates are annualized over 5 years. That is, each rate represents a 5-year average. *More details regarding the data sources and assumptions are provided in Appendix C.*

Figure 1.1

Manitoba, 2000: Regional Health Authority (RHA) Boundaries

Figure 1.2

Winnipeg, Manitoba, 2000: Community Characterization Area (CCA) Boundaries

Figure 1.3

Winnipeg, Manitoba, 2000: Neighbourhood Resource Network (NRN) Boundaries

Overview – Pregnancy Outcomes in Manitoba

Table 1.1

In Manitoba, each year there are approximately 21,000 pregnancies that result in a hospital-based outcome (Table 1.1), about 75% of which result in a live birth. The number of pregnancies resulting in a hospital-based outcome has declined by a couple of hundred each year, resulting in a decrease of 13% from 1989 to 1998. Over the same time period, there has been a 13% increase from 1989 to 1998 in the number of induced abortions. A declining number of pregnancies coupled with an increasing number of induced abortions has resulted in a 17% decrease in the number of live births reported each year in Manitoba.

About 110 pregnancies result in stillbirth each year, and there has been little change in this figure over the past decade. Similarly, there has been little change in the number of neonatal deaths in the province, with about 70 infants who die within the first month of life. The province has witnessed a decrease over time in post-neonatal deaths, that is, between 29 days and 364 days old, with an average of about 30 post-neonatal deaths annually over the past few years.

Pregnancy Outcomes by Year for Manitoba,
1989 - 1998

Year	Molar Pregnancy	Ectopic Pregnancy	Spontaneous Abortion	Induced Abortion	Stillbirths	Live Births	Neonatal Deaths	Post-Neonatal Deaths	Total Pregnancies
1989	28	384	1952	2776	117	16921	65	51	22178
1990	31	346	2043	2532	104	17040	92	49	22096
1991	26	307	2005	2530	101	16903	67	39	21872
1992	21	315	2052	2558	122	16272	73	33	21340
1993	25	328	2102	2624	127	16320	84	40	21526
1994	28	297	1980	2876	119	16089	77	42	21389
1995	20	340	1921	2844	120	15750	78	34	20995
1996	32	306	1758	3252	111	15084	64	34	20543
1997	19	347	1751	3325	95	14295	73	28	19832
1998	26	288	1694	3149	106	14059	67	24	19322
Total	256	3258	19258	28466	1122	158733	740	374	211093

Birth Rates (RHA)

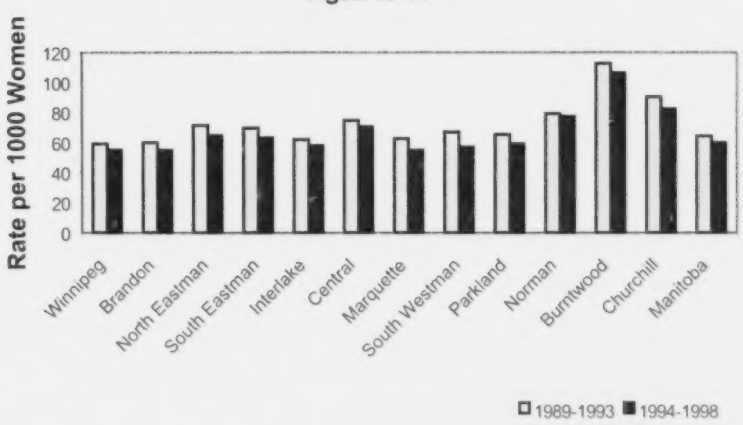
Table 1.2/Figure 1.4

The birth rate for Manitoba women, aged 15-44, has been declining over the last 10 years, and this decline is apparent to varying degrees, in all Regional Health Authorities. The Norman, Burntwood, and Churchill RHAs have the highest birth rates compared to other regions.

**Regional Birth Rates for Manitoba Women,
Aged 15 – 44 Years
According to Maternal Regional Health Authority (RHA)**

	1989-1993		1994-1998	
RHA	Number of Births	Birth Rate per 1000	Number of Births	Birth Rate per 1000
Winnipeg	46138	58.9	40844	55.2
Brandon	3388	59.9	2976	54.8
North Eastman	2742	71.6	2556	64.7
South Eastman	3847	69.9	3604	63.2
Interlake	4768	62.1	4425	58.2
Central	7388	75.0	7102	70.6
Marquette	2227	62.8	1947	54.9
South Westman	2221	67.1	1864	57.2
Parkland	2753	65.4	2450	59.3
Norman	2423	79.4	2249	77.3
Burntwood	5819	112.7	5529	106.3
Churchill	144	90.4	111	82.4
Manitoba	83858	64.4	75655	60.1

**Regional Birth Rates for Manitoba Women,
Aged 15-44**



Birth Rates (CCA)

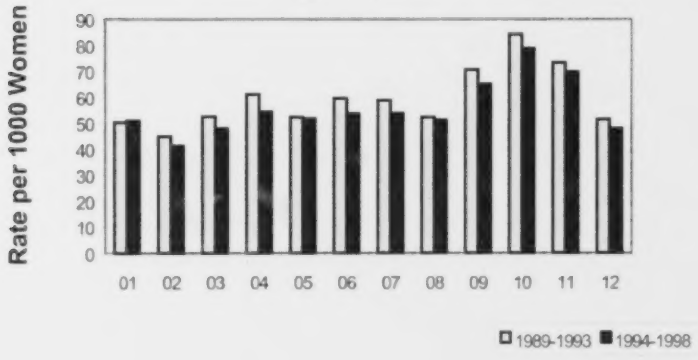
Table 1.3/Figure 1.5

Similar to regional trends, the number of births per 1000 women living in Winnipeg has declined over the last 10 years, with declines in almost all Winnipeg communities. The Inkster, Point Douglas, and Downtown areas have the highest birth rates across the city.

**Birth Rates for Winnipeg Women,
Aged 15 – 44 Years
According to Maternal Community Characterization Area (CCA)**

CCA	1989-1993 Number of Births	1989-1993 Birth Rate per 1000	1994-1998 Number of Births	1994-1998 Birth Rate per 1000
01 St. James-Assiniboia	3605	50.4	3317	51.0
02 Assiniboine South	1978	44.9	1660	41.3
03 Fort Garry	3841	52.5	3487	48.0
04 St. Vital	4659	61.1	3945	54.3
05 St. Boniface	2774	52.3	2668	51.7
06 Transcona	2610	59.5	2208	53.6
07 River East	6257	58.8	5495	53.8
08 Seven Oaks	3346	52.3	3262	51.2
09 Inkster	2718	70.6	2422	65.0
10 Point Douglas	4009	84.3	3397	78.8
11 Downtown	6655	73.3	5805	69.7
12 River Heights	3790	51.5	3260	47.9

**Birth Rates for Winnipeg Women by CCA,
Aged 15-44**



Birth Rates (NRN)

Table 1.4

Most Community Characterization Areas (CCA) can be divided into smaller subdivisions, called Neighbourhood Resource Networks (NRN). The CCA breakdown (Table 1.3) indicated that Inkster, Point Douglas, and Downtown had the highest birth rates for the city. An analysis by NRN suggests that Inkster B, Point Douglas B, and Downtown B (see corresponding NRN map, Figure 1.6) have the highest birth rates.

**Birth Rates for Winnipeg Women,
Aged 15 – 44 Years
According to Maternal Neighbourhood Resource Network (NRN)**

	1989-1993		1994-1998	
NRN	Number of Births	Birth Rate per 1000	Number of Births	Birth Rate per 1000
002 Assiniboine South	1978	44.9	1660	41.3
006 Transcona	2610	59.5	2208	53.6
01A St. James-Assiniboia	1807	44.5	1585	44.3
01B St. James-Assiniboia	1798	58.0	1732	59.0
03A Fort Garry	1521	56.2	1417	49.4
03B Fort Garry	2320	50.3	2070	47.1
04A St. Vital	2005	59.9	1804	58.7
04B St. Vital	2654	62.0	2141	51.1
05A St. Boniface	1057	57.3	982	56.7
05B St. Boniface	1717	49.6	1686	49.2
07A River East	1714	76.5	1470	69.4
07B River East	2304	52.8	1989	49.0
07C River East	2043	58.2	1834	54.4
07D River East	196	36.9	202	30.2
08A Seven Oaks	1384	51.1	1251	48.8
08B Seven Oaks	1887	53.7	1871	53.5
08C Seven Oaks	75	43.2	140	44.3
09A Inkster	1471	64.8	1314	58.7
09B Inkster	1247	78.9	1108	74.5
10A Point Douglas	2314	74.7	2068	71.4
10B Point Douglas	1695	102.3	1329	93.9
11A Downtown	3355	69.9	3036	66.9
11B Downtown	3300	77.5	2769	73.1
12A River Heights	2270	51.1	2030	49.3
12B River Heights	1520	52.1	1230	45.8

Figure 1.6

Birth Rate for Winnipeg Women, Aged 15-44 Years, 1994-1998

A Perinatal Surveillance Framework

In this report, we focus on describing various aspects of perinatal health, including fetal and infant mortality and morbidity, and indicators of maternal, newborn and infant health. To put the surveillance data into context, we have adopted a conceptual framework that defines four broad areas that influence perinatal health:

- *Maternal Health.*
- *Maternal Care.*
- *Newborn Care.*
- *Infant Care.*

Maternal Health is an important determinant of the adequate growth and development of the fetus. It is influenced by underlying factors such as socioeconomic status, and more proximate factors such as maternal nutrition, education, smoking, alcohol and other drug use, and the presence of specific medical conditions that complicate pregnancy. The availability of high quality Maternal Care around the time of labour and delivery is required to ensure the delivery of a healthy infant and to reduce the chance of complications for the mother. Newborn Care exerts a strong influence on infant outcomes in the neonatal period; particularly for infants who are born preterm or have serious medical problems. Infant Care influences the health of infants after the neonatal period.

In the first section, we review the trends and distribution of feto-infant mortality in Manitoba with a focus on regional variability. Although feto-infant mortality rates are somewhat broad indicators of perinatal health, they help to summarize the overall perinatal health of a population and to identify areas where further investigation is warranted. In the subsequent sections of this report, we provide more detailed analysis of mortality, morbidity and health care practices relevant to each of the broad perinatal health areas that we have identified: **Maternal Health, Maternal Care, Newborn Care, and Infant Care.**

CHAPTER TWO

FETO-INFANT MORTALITY

Classification of Feto-Infant Mortality

To describe feto-infant mortality in Manitoba, we have adapted concepts developed by Dr. Brian McCarthy of the Centers for Disease Control and Prevention in Atlanta, USA. Dr. McCarthy suggests a simple tabular analysis of birthweight by age-at-death to address two key components of perinatal health: "size" and "time". Furthermore, analysis of birthweight distribution and age-at-death can be seen as linking to the four broad programmatic areas in perinatal health: Maternal Health, Maternal Care, Newborn Care, and Infant Care (see Figure 2.1).

Figure 2.1

A Table For Classifying Feto-Infant Mortality by Weight and Age at Death

Birthweight (grams)	Age at Death: Late fetal (28+ weeks)	Early Neonatal (0-7 days)	Late Neonatal (8-28 days)	Post-neonatal (29-364 days)
<1000	MATERNAL CARE	NEWBORN CARE		INFANT CARE
1,000-1,499				
1,500-2,499				
2,500+				

MATERNAL HEALTH

Although categories are not mutually exclusive, this classification scheme attributes fetal and infant deaths of very low birth weight (i.e. <1500 grams) occurring at 28 weeks gestation or greater to Maternal Health issues. Among intermediate and normal birth weight groupings (i.e. >1499 grams), late fetal deaths are attributed to Maternal Care issues. Issues of Newborn Care are related to early and late neonatal mortality in intermediate birth weights (i.e. 1500-2499 grams) and early neonatal mortality in normal birth weight (>2499 grams) categories. Finally, the majority of Infant Care issues are implicated by post-neonatal mortality in intermediate and normal birth weight categories and late neonatal and post-neonatal mortality in normal birth weight infants. Although the boundaries of these designations may overlap, analysis of this table may provide information relevant to the identification of potential problems specific to programmatic areas.

Feto-Infant Mortality Rates

Disparities in the perinatal health of populations in different geographic regions of Manitoba indicate that there are opportunities for improvement in perinatal health. These "opportunity gaps" can be summarized by comparing the feto-infant mortality rates in one population to those achieved by a "benchmark" population which has relatively low feto-infant mortality rates. By comparing various populations to this benchmark population, an assessment of the opportunity gaps can be made by determining the excess feto-infant mortality rates in the four broad programmatic areas.

To make these comparisons, we have chosen, as a benchmark population, women aged 20-34 years who live in Winnipeg residential areas with a high median household income (greater than $43,457). This population was chosen as a benchmark since previous analyses showed that feto-infant mortality rates were lowest among women living in high-income Winnipeg areas and among women aged 20-34 years.

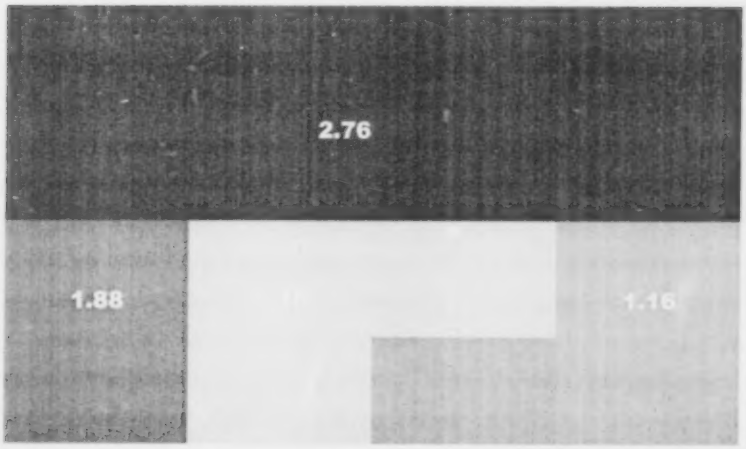
The overall feto-infant mortality rate in the benchmark population for 1989-1998 was 6.96 per 1,000 compared to an overall provincial feto-infant mortality rate (1989-1998) of 10.42 per 1,000 (see Figure 2.2). The difference between these two rates, or the excess feto-infant mortality, is 3.46 per 1,000. In other words, if all of Manitoba was able to achieve the feto-infant mortality rates achieved by the benchmark population, the feto-infant mortality rate would decline by 3.46 per 1,000 or 33%. This represents an opportunity gap in perinatal health. There is excess feto-infant mortality in all programmatic areas (Figure 2.2) and across all RHAs (Figure 2.3). The greatest excess feto-infant mortality, and therefore the largest opportunity gap, is in the Infant Care (1.36 per 1,000) and the Maternal Health (1.26 per 1,000) areas. The smallest opportunity gap is in the area of Newborn Care where the excess feto-infant mortality is 0.41 per 1,000.

As the Maternal Health and Infant Care programmatic areas have the highest feto-infant mortality rates (4.02 and 2.52 deaths per 1000 births, respectively) as well as the greatest excess feto-infant mortality for Manitoba as a whole, efforts to reduce the provincial feto-infant mortality rate should be concentrated in these areas. Understanding the causes of mortality within these areas is key to identifying potential windows of opportunity. Poor maternal health is reflected in high rates of preterm births and low birth weight, with the high infant morbidity that accompanies these pregnancy outcomes. Compared to the benchmark, the high excess feto-infant mortality rate in the maternal health area suggest a need to better understand the determinants of preterm birth and low birth weight in Manitoba. The scope of information that is routinely collected through perinatal surveillance needs to be expanded to include maternal socioeconomic indicators (such as income and education), smoking, alcohol, and prenatal nutrition. Data obtained from Vital Statistics suggests that the top three causes of post-neonatal infant mortality (deaths between 29 and 364 days old) for Manitoba are sudden infant death syndrome (SIDS), congenital anomalies, and injuries. Deaths due to SIDS and injuries and some congenital anomalies have known modifiable risk factors and more intensive promotion of known preventive practices is warranted. Additionally, underlying determinants of these outcomes such as low socio-economic status, nutritional status, and environmental conditions should be addressed.

Feto-Infant Mortality Benchmark

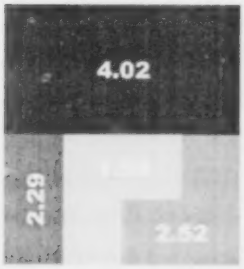
Figure 2.2

Benchmark, 1989 – 1998
Winnipeg resident, 20-34 years old
Mean annual household income $43,457 or greater



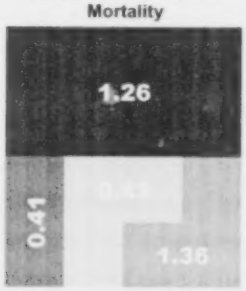
Total: 6.96

Manitoba, 1989-1998



Total: 10.42

Excessive Feto-Infant Mortality



Total Excess: 3.46

Feto-Infant Mortality: Regional Differences

Analysis of regional differences shows that several Regional Health Authorities have notable excess feto-infant mortality (see Figure 2.3) compared to the benchmark population. In particular, the Interlake, North Eastman, Central, and Burntwood RHA have the highest overall excess feto-infant mortality rates: 3.85 per 1000 in Interlake RHA; 4.01 per 1000 in North Eastman RHA; 4.41 per 1000 in Central RHA; and 7.76 per 1000 in Burntwood RHA. Figure 2.3 indicates that for these RHA the Infant Care and Maternal Health programmatic areas are contributing greatly to their excess feto-infant mortality rates. In North Eastman and the Interlake, 75% and 46%, respectively, of their excess feto-infant mortality is in the area of Infant Care. Similarly, 56% of the excess feto-infant mortality in Burntwood is attributable to Infant Care, and an additional 22% is attributable to Maternal Health issues. Maternal Health issues also account for a large proportion of the excess feto-infant mortality in Central RHA (35%).

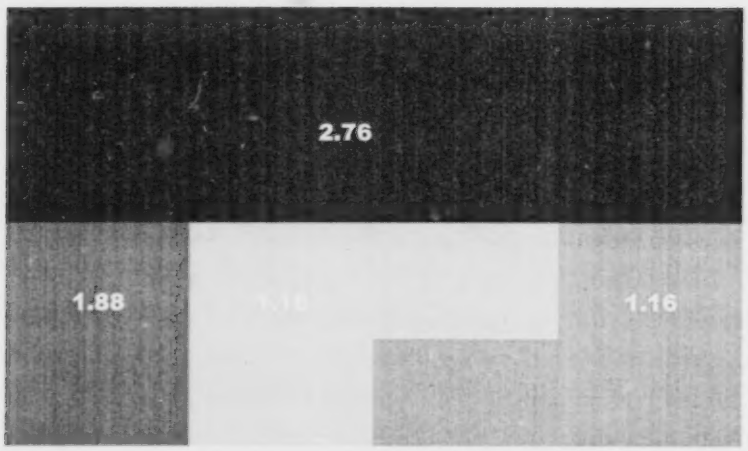
Some of the Regional Health Authorities have overall feto-infant mortality rates that are very similar to that for the benchmark population. While not lower than the benchmark, Winnipeg, Brandon, Marquette, South Westman, and Norman RHAs have excess feto-infant mortality rates of about 2.5 deaths per 1000 births (refer to Figure 2.3). Indeed, Brandon and Marquette RHA have lower feto-infant mortality rates in the Maternal Care programmatic area than the benchmark population, and Norman RHA has lower feto-infant mortality rates in both the Maternal Care and Maternal Health programme areas compared to the benchmark.

While trying to reduce the provincial feto-infant mortality rate, special attention needs to be paid to those RHAs with particularly high feto-infant mortality rates. A greater understanding of the social, environmental, and economic determinants of health that influence feto-infant mortality rates will aid in identifying potential windows of opportunity. Much can be learned from those RHAs with comparatively low feto-infant mortality rates. Determinants of low feto-infant mortality rates will likely be as important as are high rates in achieving an understanding of the issues and concerns that arise during the pre- and postnatal period.

Feto-Infant Mortality Rates per 1000 Births

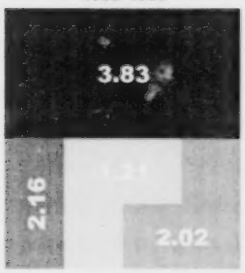
Figure 2.3

Benchmark, 1989 – 1998
Winnipeg resident, 20-34 years old
Mean annual household income $43,457 or greater



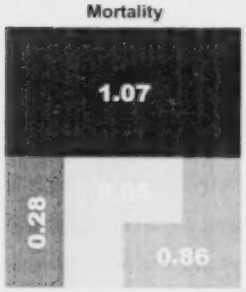
Total: 6.96

Winnipeg, 1989-1998



Total: 9.22

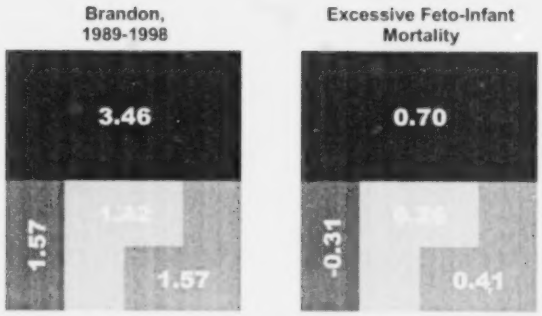
Excessive Feto-Infant Mortality

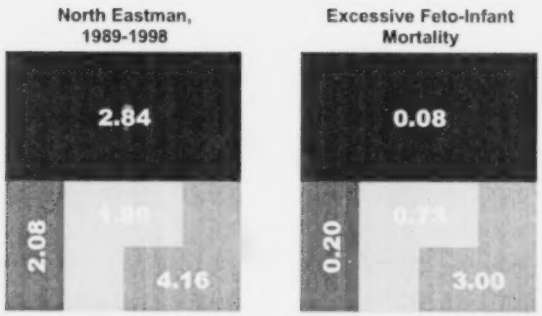


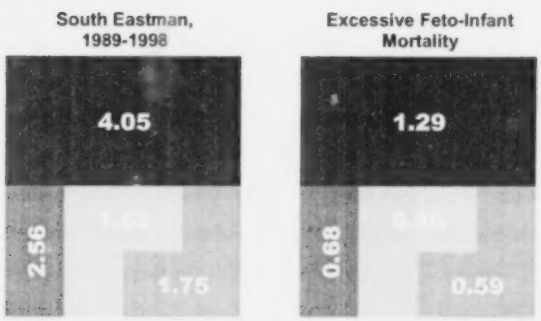
Total Excess: 2.26

Feto-Infant Mortality Rates per 1000 Births

Figure 2.3 continued

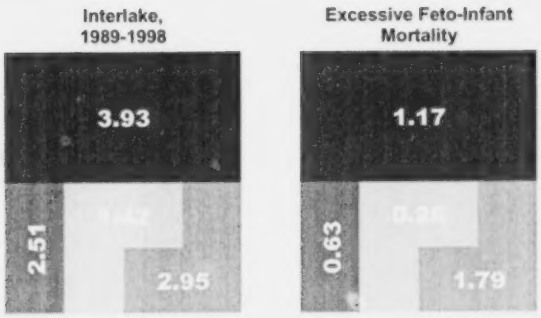






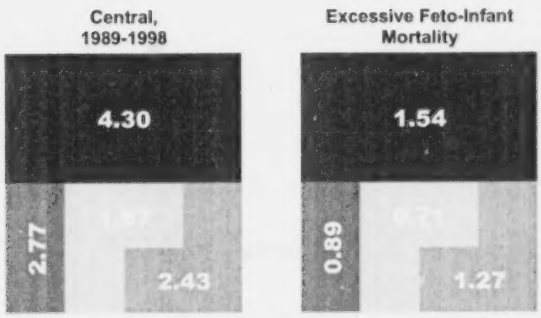
Feto-Infant Mortality Rates per 1000 Births

Figure 2.3 continued



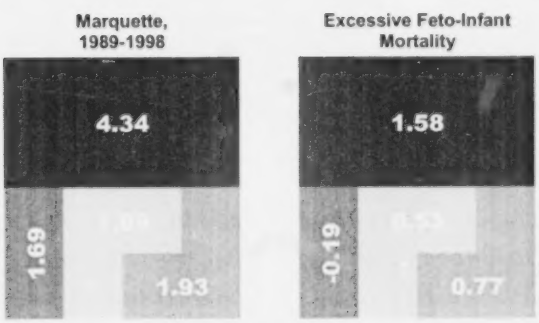
Total: 10.81

Total Excess: 3.85



Total: 11.37

Total Excess: 4.41

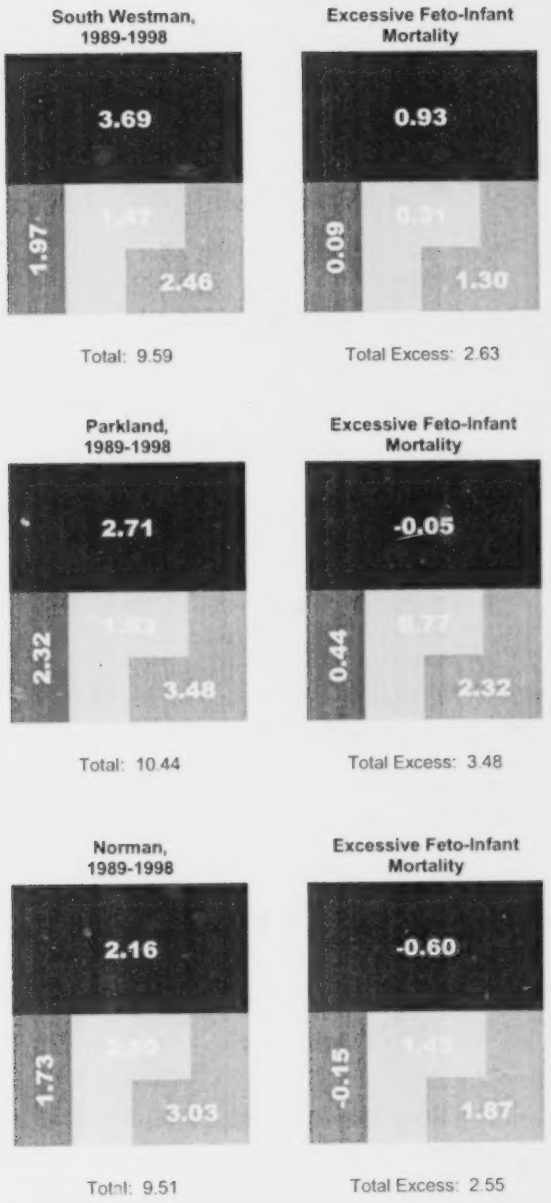


Total: 9.65

Total Excess: 2.69

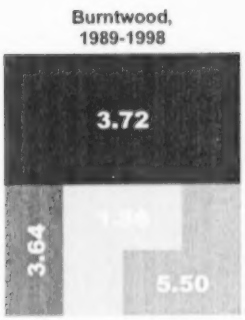
Feto-Infant Mortality Rates per 1000 Births

Figure 2.3 continued

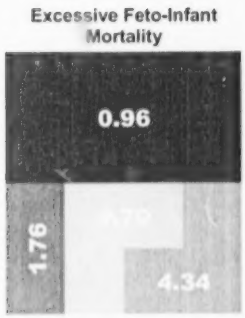


Feto-Infant Mortality Rates per 1000 Births

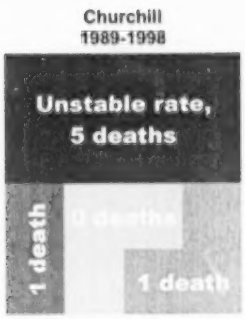
Figure 2.3 continued



Total: 14.72



Total Excess: 7.76



Total: unstable rates,
255 births in total

CHAPTER THREE

MATERNAL HEALTH

Birth Rates by Maternal Age Group (RHA)

Table 3.1

About 80% of all births are to women between the ages of 20-34 years. The 1994-1998 time period saw a considerably greater proportion of births to women 35 years and older, particularly in Winnipeg. Across the province variations exist between regions in terms of maternal age at delivery. Between 14-20% of all births to women living in North Eastman, Parkland, Norman, and Burntwood are to women younger than 20 years, compared to 9% for the province.

Regional Birth Rates by Maternal Age Group
According to Maternal Regional Health Authority (RHA)

RHA	Year Group 1989 - 1993					Year Group 1994 - 1998				
	<18	18-19	20-34	35-39	>39	<18	18-19	20-34	35-39	>39
Winnipeg	1389	2376	37911	3993	548	1258	2182	32193	4595	697
% of total births	3.0	5.1	82.0	8.6	1.2	3.1	5.3	78.7	11.2	1.7
Brandon	103	209	2855	193	33	96	184	2441	230	28
% of total births	3.0	6.2	84.1	5.7	1.0	3.2	6.2	81.9	7.7	0.9
North Eastman	176	196	2174	186	18	170	194	1958	214	36
% of total births	6.4	7.1	79.1	6.8	0.7	6.6	7.5	76.1	8.3	1.4
South Eastman	80	188	3347	225	12	78	161	3080	251	37
% of total births	2.1	4.9	86.9	5.8	0.3	2.2	4.5	85.4	7.0	1.0
Interlake	208	319	3880	334	40	200	259	3517	412	46
% of total births	4.4	6.7	81.2	7.0	0.8	4.5	5.8	79.3	9.3	1.0
Central	231	393	6285	434	57	222	407	5838	573	74
% of total births	3.1	5.3	84.9	5.9	0.8	3.1	5.7	82.1	8.1	1.0
Marquette	77	159	1818	148	29	59	113	1588	163	28
% of total births	3.5	7.1	84.5	6.6	1.3	3.0	5.8	81.4	8.4	1.4
South Westman	25	85	1946	147	18	25	73	1577	169	22
% of total births	1.1	3.8	87.6	6.6	0.8	1.3	3.9	84.5	9.1	1.2
Parkland	202	260	2154	129	16	170	243	1867	149	27
% of total births	7.3	9.4	78.0	4.7	0.6	6.9	9.9	75.93	6.1	1.1
Norman	159	250	1914	94	15	154	251	1708	125	14
% of total births	6.5	10.3	78.7	3.9	0.6	6.8	11.2	75.8	5.6	0.6
Burntwood	542	730	4284	251	36	494	656	4122	252	32
% of total births	9.3	12.5	73.3	4.3	0.6	8.9	11.8	74.2	4.5	0.6
Churchill	4	17	114	9	0	8	7	88	7	1
% of total births	2.8	11.8	79.2	6.3	0	5.9	9.3	78.8	5.9	0
Manitoba	3196	5182	68682	6143	822	2934	4730	59977	7140	1042
% of total births	3.8	6.2	81.7	7.3	1.0	3.9	6.2	79.1	9.4	1.4

Birth Rates by Maternal Age Group (CCA)

Table 3.2

Similar to the provincial picture, about 80% of all births in Winnipeg are to women between the ages of 20-34 years. Within the city, the 1994-1998 time period witnessed an increasing proportion of births to women 35 years and older. Variations within the city are apparent for births among both younger and older women. Specifically, the Inkster, Point Douglas, and Downtown CCA show greater proportions of births to women younger than 20 years, while Assiniboine South, Fort Garry, and River Heights have a greater percentage of births to women older than 34 years compared to the rest of the city.

Birth Rates by Maternal Age Group for Winnipeg Women According to Maternal Community Characterization Area (CCA)

	Year Group 1989 - 1993					Year Group 1994 - 1998				
CCA	<18	18-19	20-34	35-39	>39	<18	18-19	20-34	35-39	>39
01 St. James-Assiniboia	80	122	3110	273	25	59	124	2778	318	40
% of total births	2.2	3.4	86.2	7.6	0.7	1.8	3.7	83.7	9.6	1.2
02 Assiniboine South	22	41	1609	280	26	38	33	1275	278	36
% of total births	1.1	2.1	81.3	14.2	1.3	2.3	2.0	76.8	16.8	2.2
03 Fort Garry	53	97	3180	456	57	35	91	2789	512	63
% of total births	1.4	2.5	82.8	11.9	1.5	1.0	2.6	79.9	14.7	1.8
04 St. Vital	78	144	3967	432	42	66	146	3173	496	71
% of total births	1.7	3.1	85.1	9.3	0.9	1.7	3.7	80.3	12.6	1.8
05 St. Boniface	63	122	2299	256	39	48	104	2174	307	37
% of total births	2.3	4.4	82.7	9.2	1.4	1.8	3.9	81.4	11.5	1.4
06 Transcona	66	100	2302	132	12	61	97	1833	197	25
% of total births	2.5	3.8	88.1	5.1	0.5	2.8	4.4	82.8	8.9	1.1
07 River East	163	310	5257	472	59	143	341	4367	577	73
% of total births	2.6	5.0	84.0	7.5	0.9	2.6	6.2	79.4	10.5	1.3
08 Seven Oaks	81	158	2763	309	39	70	160	2600	380	62
% of total births	2.4	4.7	82.5	9.2	1.2	2.1	4.9	79.5	11.6	1.9
09 Inkster	100	161	2209	206	45	122	138	1891	242	37
% of total births	3.7	5.9	81.2	7.6	1.7	5.0	5.7	77.8	10.0	1.5
10 Point Douglas	314	421	3033	225	45	258	333	2504	260	51
% of total births	7.8	10.4	75.1	5.6	1.1	7.6	9.8	73.5	7.6	1.5
11 Downtown	301	565	5209	511	88	314	488	4358	544	126
% of total births	4.5	8.5	78.1	7.7	1.3	5.4	8.4	74.8	9.3	2.2
12 River Heights	73	150	3051	445	73	54	136	2508	488	79
% of total births	1.9	4.0	80.5	11.7	1.9	1.7	4.2	76.8	15.0	2.4

Birth Rates by Maternal Age Group (NRN)

Table 3.3

Inkster B, Point Douglas A and B, and Downtown B show the highest proportion of births to women younger than 20 years, although these proportions have remained stable across the last 10 years. In contrast, Assiniboine South, Fort Garry A, River East D, and River Heights A have the highest percentages of births to women over 34 years of age, and these proportions have increased over time.

Birth Rates by Maternal Age Group for Winnipeg Women
According to Maternal Neighbourhood Resource Network (NRN)

	Year Group 1989 - 1993					Year Group 1994 - 1998				
NRN	<18	18-19	20-34	35-39	>39	<18	18-19	20-34	35-39	>39
002 Assiniboine South	22	41	1609	280	26	38	33	1275	278	36
% of total births	1.1	2.1	81.3	14.2	1.3	2.3	2.0	76.8	16.8	2.2
006 Transcona	66	100	2302	132	12	61	97	1833	197	25
% of total births	2.5	3.8	88.1	5.1	0.5	2.8	4.4	82.8	8.9	1.1
01A St. James-Assiniboia	43	52	1566	136	12	24	64	1328	154	15
% of total births	2.4	2.9	86.6	7.5	0.7	1.5	4.0	83.8	9.7	1.0
01B St. James-Assiniboia	37	70	1544	137	13	35	60	1450	164	25
% of total births	2.1	3.9	85.7	7.6	0.7	2	3.5	83.6	9.5	1.4
03A Fort Garry	13	28	1238	216	26	10	26	1083	271	29
% of total births	0.9	1.8	81.4	14.2	1.7	0.7	1.8	76.3	19.1	2.0
03B Fort Garry	40	69	1942	240	31	25	65	1706	241	34
% of total births	1.7	3.0	83.6	10.3	1.3	1.2	3.1	82.4	11.6	1.6
04A St. Vital	43	94	1679	171	21	43	97	1440	195	31
% of total births	2.1	4.7	83.6	8.5	1.1	2.4	5.4	79.7	10.8	1.7
04B St. Vital	35	50	2288	261	21	23	49	1733	301	40
% of total births	1.3	1.9	86.2	9.8	0.8	1.1	2.3	80.8	14.0	1.9
05A St. Boniface	27	61	864	92	15	18	50	808	91	16
% of total births	2.6	5.8	81.6	8.7	1.4	1.8	5.1	82.2	9.3	1.6
05B St. Boniface	36	61	1435	164	24	30	54	1366	216	21
% of total births	2.1	3.6	83.4	9.5	1.4	1.8	3.2	81.0	12.8	1.2
07A River East	63	110	1448	82	12	46	134	1144	127	16
% of total births	3.7	6.4	84.4	4.8	0.7	3.1	9.1	78.1	8.6	1.1
07B River East	33	86	1964	196	26	43	95	1599	229	24
% of total births	1.4	3.7	85.2	8.5	1.1	2.2	4.8	80.4	11.5	1.2
07C River East	65	110	1699	153	18	53	110	1485	165	23
% of total births	3.2	5.4	83.1	7.5	0.9	2.9	6.0	80.9	9.0	1.3
07D River East	2	4	146	41	3	1	2	134	56	10
% of total births	1.0	2.0	74.5	20.9	1.5	0.5	1.0	66.0	27.6	4.9
08A Seven Oaks	44	79	1130	118	16	32	66	1006	130	23
% of total births	3.2	5.7	81.5	8.5	1.2	2.6	5.3	80.0	10.3	1.8
08B Seven Oaks	37	77	1567	187	20	37	94	1486	225	33
% of total births	2.0	4.1	83.0	9.9	1.1	2.0	5.0	79.6	12.0	1.8
08C Seven Oaks	0	2	66	4	3	1	0	108	25	6
% of total births	0	2.7	88.0	5.3	4.0	0.7	0	77.1	17.9	4.3
09A Inkster	30	35	1229	148	30	41	48	1037	168	23
% of total births	2.0	2.4	83.5	10.1	2.0	3.1	3.6	78.7	12.8	1.8
09B Inkster	70	126	980	58	15	81	90	854	74	14
% of total births	5.6	10.1	78.5	4.6	1.2	7.3	8.1	76.7	6.7	1.3
10A Point Douglas	132	210	1805	151	29	118	178	1559	187	32
% of total births	5.7	9.0	77.6	6.5	1.3	5.7	8.6	75.2	9.0	1.5
10B Point Douglas	182	211	1228	74	16	140	155	945	73	19
% of total births	10.6	12.3	71.8	4.3	0.9	10.5	11.6	71.0	5.5	1.4
11A Downtown	138	224	2657	299	49	141	183	2307	336	84
% of total births	4.1	6.7	78.9	8.9	1.5	4.6	6.0	75.6	11.0	2.8
11B Downtown	163	341	2552	212	39	173	305	2051	208	42
% of total births	4.9	10.3	77.2	6.4	1.2	6.2	11.0	73.8	7.5	1.5
12A River Heights	29	47	1834	306	56	22	44	1542	363	60
% of total births	1.3	2.1	80.7	13.5	2.5	1.1	2.2	75.9	17.9	3.0
12B River Heights	44	103	1217	139	17	32	92	966	125	19
% of total births	2.9	6.8	80.1	9.1	1.1	2.6	7.5	78.3	10.1	1.5

Teen Pregnancies (RHA)

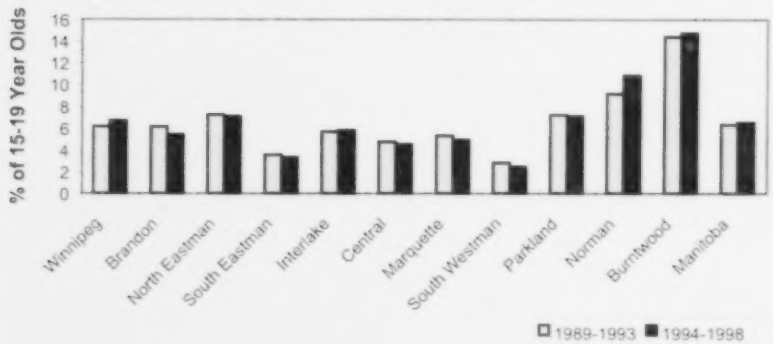
Table 3.4/Figure 3.1

While teen pregnancies have remained fairly constant over time for Manitoba as a whole, Winnipeg, Norman, and Burntwood regions have shown an increase, particularly among 18-19 year olds. There is wide variation in teen pregnancy rates, as North Eastman, Parkland, Norman, and Burntwood have considerably higher pregnancy rates among 15-19 year olds than the province as a whole.

Regional Teen (12-19 Years) Pregnancy Rates
According to Maternal Regional Health Authority (RHA)

RHA	Year Group 1989 - 1993			Year Group 1994 - 1998		
	12-14 Years	15-17 Years	18-19 Years	12-14 Years	15-17 Years	18-19 Years
Winnipeg	140	2341	4135	143	2531	4182
% of adolescents	0.2	3.9	9.3	0.2	4.3	10.1
Brandon	7	174	322	7	151	282
% of adolescents	0.1	3.7	9.3	0.1	3.1	8.9
North Eastman	12	223	271	21	225	287
% of adolescents	0.3	5.2	10.7	0.5	5.0	10.4
South Eastman	5	99	256	3	123	216
% of adolescents	0.1	1.6	6.7	0.0	2.0	5.5
Interlake	21	293	481	14	302	434
% of adolescents	0.3	3.5	9.0	0.2	3.8	9.1
Central	13	312	544	13	299	545
% of adolescents	0.1	2.8	7.8	0.1	2.6	7.6
Marquette	8	143	218	6	129	197
% of adolescents	0.2	3.4	8.3	0.1	3.2	7.7
South Westman	2	46	133	5	42	112
% of adolescents	0.1	1.2	5.5	0.1	1.1	4.6
Parkland	19	262	358	10	228	348
% of adolescents	0.4	4.8	11.3	0.2	4.6	10.9
Norman	10	202	327	14	209	344
% of adolescents	0.3	5.8	14.4	0.4	6.8	17.2
Burntwood	30	619	894	35	599	838
% of adolescents	0.5	9.9	21.2	0.5	9.9	22.5
Churchill	0	11	25	0	14	13
% of adolescents	unstable	unstable	unstable	unstable	unstable	unstable
Manitoba	267	4725	7964	271	4852	7788
% of adolescents	0.2	4.0	9.8	0.2	4.2	10.1

Regional Pregnancy Rates for 15-19 Year Olds



Teen Pregnancies (CCA)

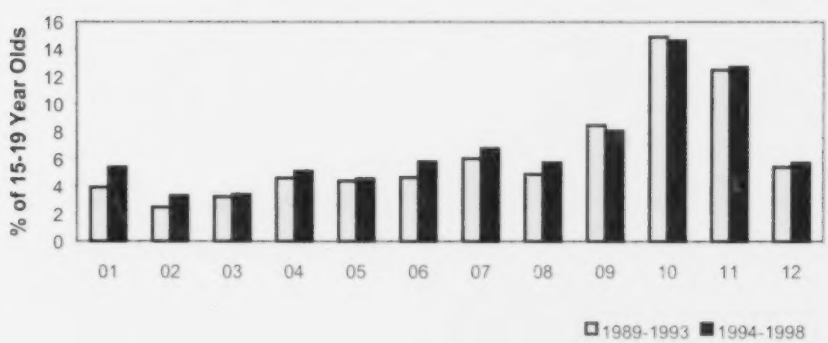
Table 3.5/Figure 3.2

Pregnancies to 15-19 year olds have gone up slightly for Winnipeg over time, and this small increase is reflected in most communities within the city. Similar to the provincial picture, while most areas within the city have a teen pregnancy rate of 6.5% or lower, some communities are considerably higher. Inkster, Point Douglas, and Downtown in particular have rates significantly greater than that for Winnipeg as a whole, although their rates have not increased over time.

Teen (12-19 Years) Pregnancy Rates for Winnipeg
According to Maternal Community Characterization Area (CCA)

	Year Group 1989 – 1993			Year Group 1994 - 1998		
CCA	12-14 Years	15-17 Years	18-19 Years	12-14 Years	15-17 Years	18-19 Years
01 St. James -Assiniboine	10	146	256	5	178	280
% of adolescents	0.2	2.5	5.8	0.1	3.6	7.8
02 Assiniboine South	1	64	112	2	100	109
% of adolescents	0.0	1.5	3.9	0.0	2.6	4.5
03 Fort Garry	6	113	209	2	121	217
% of adolescents	0.1	2.0	4.8	0.0	2.1	5.3
04 St. Vital	9	166	277	11	167	327
% of adolescents	0.2	2.9	7.1	0.2	2.9	8.3
05 St. Boniface	5	113	218	2	118	205
% of adolescents	0.1	2.6	6.8	0.0	2.8	6.9
06 Transcona	4	121	183	10	129	208
% of adolescents	0.1	3.0	7.4	0.3	3.7	9.1
07 River East	13	315	570	16	349	643
% of adolescents	0.2	3.7	9.2	0.2	4.0	10.7
08 Seven Oaks	8	161	291	13	197	356
% of adolescents	0.1	2.9	7.8	0.2	3.4	9.2
09 Inkster	12	160	283	15	204	258
% of adolescents	0.3	5.0	13.7	0.4	5.8	11.6
10 Point Douglas	43	420	609	21	384	511
% of adolescents	1.1	10.5	20.9	0.5	10.6	20.5
11 Downtown	23	432	867	37	484	804
% of adolescents	0.4	7.7	17.9	0.6	8.4	18.4
12 River Heights	6	132	278	10	112	272
% of adolescents	0.2	3.2	8.0	0.3	3.0	9.0

Pregnancy Rates for 15-19 Year Olds
by Winnipeg CCA



Teen Pregnancies (NRN)

Table 3.6

Teen (12-19 Years) Pregnancy Rates
According to Winnipeg Neighbourhood Resource Network (NRN)

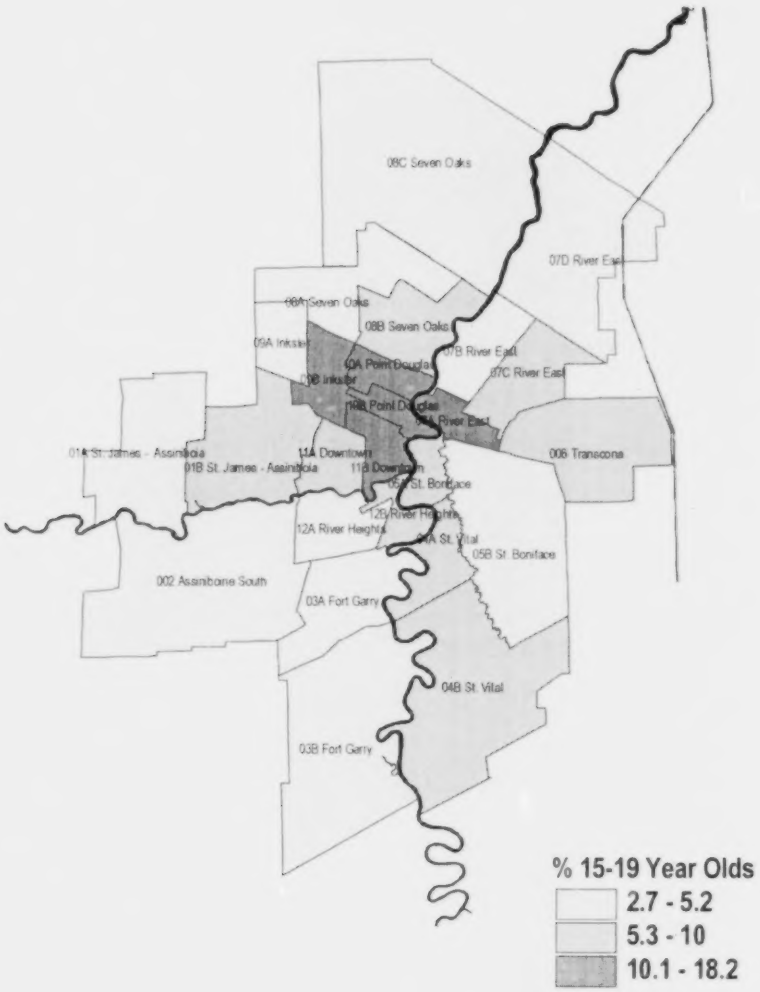
NRN	Year Group 1989 - 1993			Year Group 1994 - 1998		
	12-14 Years	15-17 Years	18-19 Years	12-14 Years	15-17 Years	18-19 Years
002 Assiniboine South	1	64	112	2	100	109
% of adolescents	0.0	1.5	3.9	0.0	2.6	4.5
006 Transcona	4	121	183	10	129	208
% of adolescents	0.1	3.0	7.4	0.3	3.7	9.1
01A St. James-Assiniboia	3	74	141	1	83	149
% of adolescents	0.1	2.0	5.0	0.0	2.8	6.9
01B St. James-Assiniboia	7	72	115	4	95	131
% of adolescents	0.3	3.5	7.2	0.2	4.8	9.1
03A Fort Garry	0	34	70	1	37	72
% of adolescents	0.0	1.8	5.1	0.0	1.8	5.0
03B Fort Garry	6	79	139	1	84	145
% of adolescents	0.2	2.1	4.7	0.0	2.2	5.4
04A St. Vital	6	85	161	2	93	190
% of adolescents	0.3	4.0	9.1	0.1	4.5	11.9
04B St. Vital	3	81	116	9	74	137
% of adolescents	0.1	2.3	5.5	0.2	2.1	5.8
05A St. Boniface	4	42	92	0	31	86
% of adolescents	0.4	3.6	10.4	0.0	3.0	10.0
05B St. Boniface	1	71	126	2	87	119
% of adolescents	0.0	2.2	5.4	0.1	2.8	5.7
07A River East	3	109	187	1	89	209
% of adolescents	0.2	8.1	15.7	0.1	6.5	21.4
07B River East	4	78	165	5	117	197
% of adolescents	0.1	2.2	6.7	0.1	3.3	8.1
07C River East	6	119	205	10	128	218
% of adolescents	0.2	3.8	9.3	0.3	4.2	10.1
07D River East	0	9	13	0	15	19
% of adolescents	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
08A Seven Oaks	6	88	150	5	91	159
% of adolescents	0.2	3.1	8.7	0.2	2.4	8.6
08B Seven Oaks	2	72	137	8	100	188
% of adolescents	0.1	2.8	7.3	0.3	3.8	10.2
08C Seven Oaks	0	1	4	0	6	9
% of adolescents	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
09A Inkster	5	49	85	6	88	106
% of adolescents	0.2	2.6	7.5	0.3	3.8	7.7
09B Inkster	7	111	198	9	116	152
% of adolescents	0.5	8.6	21.2	0.7	9.8	17.8
10A Point Douglas	18	177	314	11	200	293
% of adolescents	0.8	7.4	17.7	0.4	8.7	18.3
10B Point Douglas	25	243	295	10	184	218
% of adolescents	1.7	15.0	25.9	0.7	14.0	24.3
11A Downtown	14	203	362	18	233	323
% of adolescents	0.4	6.3	15.0	0.5	7.1	14.2
11B Downtown	9	229	505	19	251	481
% of adolescents	0.4	9.7	20.9	0.8	10.1	23.0
12A River Heights	3	63	112	3	61	113
% of adolescents	0.1	2.2	5.0	0.1	2.4	6.0
12B River Heights	3	69	166	7	51	159
% of adolescents	0.3	5.5	13.4	0.6	4.6	14.0

Teen Pregnancies

Table 3.6/Figure 3.3

There is significant variation in pregnancy rates for 15-19 year olds, where some NRNs have a teen pregnancy rate of less than 5%, while others show a teen pregnancy rate upwards of 15%. Additionally, some neighbourhoods (St. James-Assiniboia A, St. Vital A, River East A, and Seven Oaks B) show an increase in pregnancy rates for 15-19 year olds across the two time periods of more than 3 per 100 adolescents.

Pregnancy Rate for Winnipeg Women Aged 15-19 Years, 1994-1998



Non-Delivered Pregnancies (RHA)

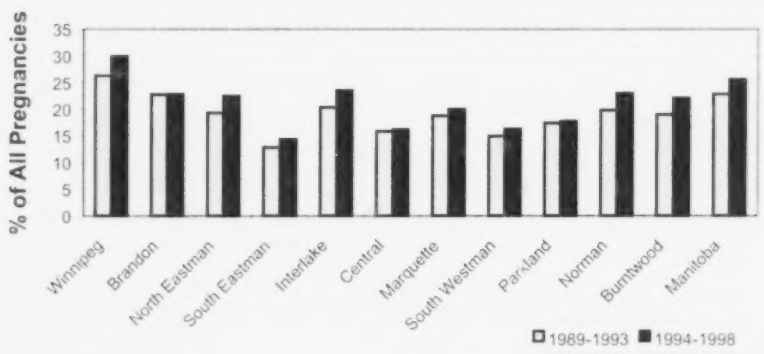
Table 3.7/Figure 3.4

Across the province, about one quarter of all pregnancies that have a hospital-based outcome do not result in a delivery. Approximately half of these non-delivered pregnancies result in an induced abortion and an additional 40% result in a spontaneous abortion. Each region of the province has witnessed an increase in the rate of non-delivered pregnancies across time, and in all regions the increase is mostly accounted for by an increase in the rate of induced abortions. There are considerable regional differences in the rate of non-delivered pregnancies, with much of the difference accounted for by higher than average rates of induced abortions for women living in Winnipeg and Brandon, and considerably lower than average induced abortion rates for women living in South Eastman, Central, South Westman, and Parkland.

Regional Rates of Non-Delivered Pregnancies
According to Maternal Regional Health Authority (RHA)

	Year Group 1989 – 1993				Year Group 1994 - 1998			
RHA	Molar pregnancy	Ectopic pregnancy	Spontaneous abortions	Induced abortions	Molar pregnancy	Ectopic pregnancy	Spontaneous abortions	Induced abortions
Winnipeg	69	984	5703	9785	62	860	5053	11526
% of pregnancies	0.1	1.6	9.1	15.5	0.1	1.5	8.6	19.6
Brandon	1	63	410	535	1	51	281	557
% of pregnancies	0.0	1.4	9.2	12.0	0.0	1.3	7.2	14.3
North Eastman	9	59	347	249	5	58	325	356
% of pregnancies	0.3	1.7	10.1	7.2	0.2	1.7	9.8	10.7
South Eastman	4	48	349	167	11	37	317	247
% of pregnancies	0.1	1.1	7.8	3.8	0.3	0.9	7.4	5.8
Interlake	4	94	533	589	6	103	524	726
% of pregnancies	0.1	1.6	8.9	9.8	0.1	1.8	9.1	12.6
Central	13	118	786	472	8	103	733	525
% of pregnancies	0.2	1.3	8.9	5.4	0.1	1.2	8.6	6.2
Marquette	1	54	261	222	4	38	229	254
% of pregnancies	0.0	1.9	9.1	7.7	0.2	1.4	8.7	9.6
South Westman	7	28	224	137	8	36	171	155
% of pregnancies	0.3	1.1	8.4	5.2	0.4	1.6	7.5	6.8
Parkland	4	49	352	220	5	48	290	229
% of pregnancies	0.1	1.4	9.8	6.1	0.2	1.5	9.0	7.1
Norman	6	57	321	224	8	60	355	260
% of pregnancies	0.2	1.9	10.4	7.3	0.3	2.0	11.9	8.7
Burntwood	13	123	845	399	5	182	814	584
% of pregnancies	0.2	1.7	11.6	5.5	0.1	2.5	11.3	8.1
Churchill	0	3	23	21	2	2	12	27
% of pregnancies	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
Manitoba	131	1680	10154	13020	125	1578	9104	15446
% of pregnancies	0.1	1.5	9.2	11.9	0.1	1.5	8.8	15.0

Regional Rates of Non-Delivered Pregnancies



Non-Delivered Pregnancies (CCA)

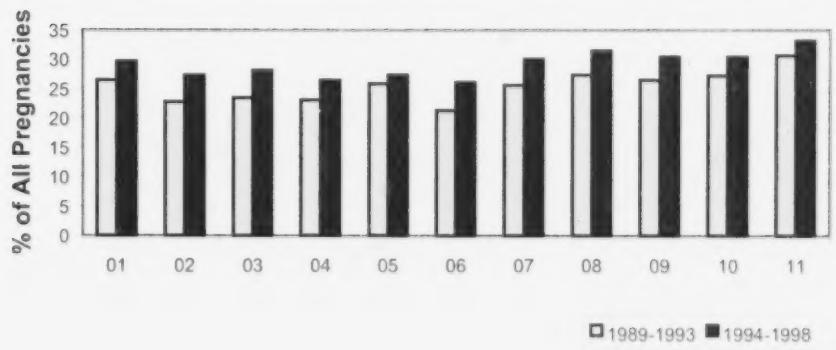
Table 3.8/Figure 3.5

Similar to the provincial picture, about 25% of all pregnancies for women in Winnipeg do not result in a delivery. Of these non-delivered pregnancies about two-thirds result in an induced abortion, and an additional 30% result in a spontaneous abortion. Increases in the rate of non-delivered pregnancies across all Winnipeg communities seem to be driven by increases in the rate of induced abortions.

Rates of Non-Delivered Pregnancies within Winnipeg According to Maternal Community Characterization Area (CCA)

	Year Group 1989 – 1993				Year Group 1994 - 1998			
CCA	Molar Pregnancy	Ectopic pregnancy	Spontaneous abortions	Induced abortions	Molar pregnancy	Ectopic pregnancy	Spontaneous abortions	Induced abortions
01 St. James-Assiniboia	10	74	459	759	8	72	411	909
% of pregnancies	0.2	1.5	9.3	15.4	0.2	1.5	8.7	19.3
02 Assiniboine South	1	35	219	330	2	22	206	400
% of pregnancies	0.0	1.4	8.5	12.8	0.1	1.0	8.9	17.3
03 Fort Garry	3	55	431	696	1	64	448	868
% of pregnancies	0.1	1.1	8.5	13.8	0.0	1.3	9.1	17.7
04 St. Vital	5	92	558	747	5	62	442	912
% of pregnancies	0.1	1.5	9.2	12.3	0.1	1.2	8.2	16.9
05 St. Boniface	6	48	368	544	8	51	296	653
% of pregnancies	0.2	1.3	9.8	14.5	0.2	1.4	8.0	17.7
06 Transcona	1	42	284	381	2	41	257	480
% of pregnancies	0.0	1.3	8.5	11.4	0.1	1.4	8.6	16.0
07 River East	10	138	750	1253	13	130	662	1559
% of pregnancies	0.1	1.6	8.9	14.9	0.2	1.7	8.4	19.8
08 Seven Oaks	2	82	420	756	3	77	421	1006
% of pregnancies	0.0	1.8	9.1	16.4	0.1	1.6	8.8	21.0
09 Inkster	9	56	379	538	3	66	276	718
% of pregnancies	0.2	1.5	10.2	14.5	0.1	1.9	7.9	20.5
10 Point Douglas	7	83	499	926	3	88	403	1001
% of pregnancies	0.1	1.5	9.0	16.6	0.1	1.8	8.2	20.3
11 Downtown	10	174	890	1904	11	115	783	2014
% of pregnancies	0.1	1.8	9.2	19.6	0.1	1.3	8.9	22.9
12 River Heights	6	102	461	971	3	74	447	1023
% of pregnancies	0.1	1.9	8.6	18.2	0.1	1.5	9.3	21.2

Rates of Non-Delivered Pregnancies for Winnipeg CCA



Stillbirths (RHA)

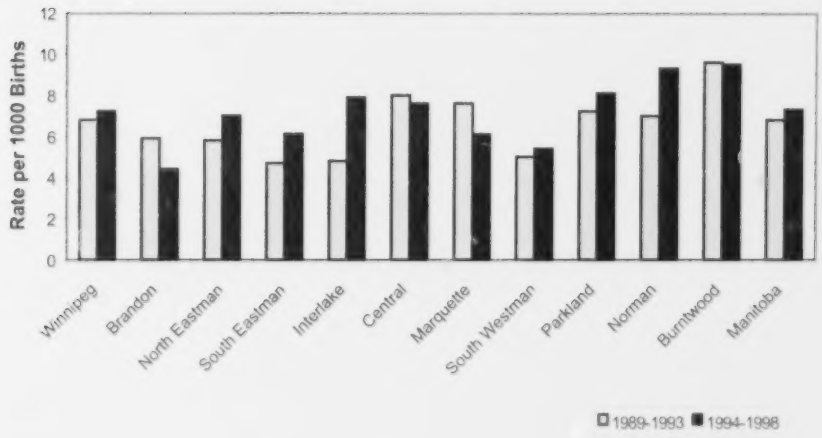
Table 3.9/Figure 3.6

Across the province, stillbirth rates have increased slightly over the last 10 years, although not in all regions. In particular, the Interlake and Norman regions have seen comparatively large increases in their stillbirth rates.

Regional Stillbirth (≥ 500 grams or ≥ 20 weeks gestation) Rates According to Maternal Regional Health Authority (RHA)

RHA	1989-1993 Number of Stillbirths	1989-1993 Stillbirth Rate per 1000 Births	1994-1998 Number of Stillbirths	1994-1998 Stillbirth Rate per 1000 Births
Winnipeg	312	6.8	293	7.2
Brandon	20	5.9	13	4.4
North Eastman	16	5.8	18	7.0
South Eastman	18	4.7	22	6.1
Interlake	23	4.8	35	7.9
Central	59	8.0	54	7.6
Marquette	17	7.6	12	6.1
South Westman	11	5.0	10	5.4
Parkland	20	7.2	20	8.1
Norman	17	7.0	21	9.3
Burntwood	56	9.6	53	9.5
Churchill	2	Unstable	-	-
Manitoba	571	6.8	551	7.3

Regional Stillbirth Rates



Stillbirths (CCA)

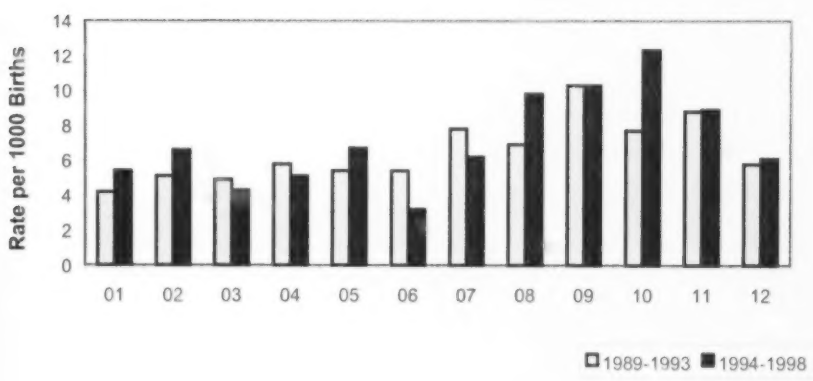
Table 3.10/Figure 3.7

The stillbirth rate for the city of Winnipeg was 6.8 per 1000 births in the 1989-1993 time period, and rose to 7.2 per 1000 births in 1994-1998. As with the provincial picture, not all areas of the city showed similar increases. While the stillbirth rate for Transcona and River East dropped considerably, Seven Oaks and Point Douglas showed significant increases.

Stillbirth (≥ 500 grams or ≥ 20 weeks gestation) Rates for Winnipeg Women According to Maternal Community Characterization Area (CCA)

CCA	1989-1993 Number of Stillbirths	1989-1993 Stillbirth Rate per 1000 Births	1994-1998 Number of Stillbirths	1994-1998 Stillbirth Rate per 1000 Births
01 St. James-Assiniboia	15	4.2	18	5.4
02 Assiniboine South	10	5.1	11	6.6
03 Fort Garry	19	4.9	15	4.3
04 St. Vital	27	5.8	20	5.1
05 St. Boniface	15	5.4	18	6.7
06 Transcona	14	5.4	7	3.2
07 River East	49	7.8	34	6.2
08 Seven Oaks	23	6.9	32	9.8
09 Inkster	28	10.3	25	10.3
10 Point Douglas	31	7.7	42	12.3
11 Downtown	59	8.8	52	8.9
12 River Heights	22	5.8	20	6.1

Stillbirth Rates by Winnipeg CCA



Preterm Births (RHA)

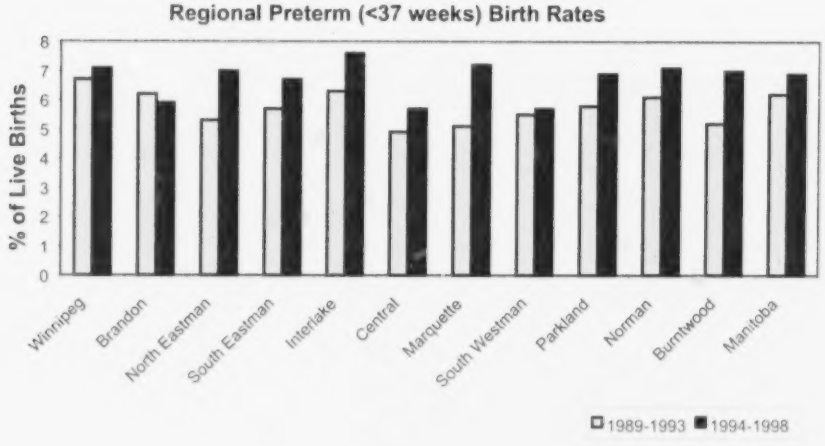
Table 3.11/Figure 3.8

Across most regions of the province the incidence of preterm births has increased, particularly in Marquette, Burntwood, and North Eastman.

Regional Preterm Birth (<37 weeks) Rates
According to Maternal Regional Health Authority (RHA)

RHA	1989-1993 Number of Preterm Births	1989-1993 Preterm Birth Rate per 100 Live Births	1994-1998 Number of Preterm Births	1994-1998 Preterm Birth Rate per 100 Live Births
Winnipeg	3063	6.7	2888	7.1
Brandon	208	6.2	176	5.9
North Eastman	146	5.3	179	7.0
South Eastman	220	5.7	240	6.7
Interlake	300	6.3	334	7.6
Central	358	4.9	403	5.7
Marquette	113	5.1	140	7.2
South Westman	121	5.5	105	5.7
Parkland	160	5.8	169	6.9
Norman	148	6.1	158	7.1
Burntwood	303	5.2	387	7.0
Churchill	12	Unstable	3	Unstable
Manitoba	5152	6.2	5182	6.9

Regional Preterm (<37 weeks) Birth Rates



Preterm Births (RHA)

Tables 3.12 and 3.13

About 70% of all preterm births have a spontaneous labour, although the proportion with induced labour has increased in almost all regions, most significantly in Marquette and South Westman.

Percent of Preterm (<37 weeks gestation) Births by Type of Labour and Maternal Regional Health Authority (RHA)

	1989-1993			1994-1998		
RHA	Number of Preterm Births	% with Spontaneous Labour	% with Induced Labour	Number of Preterm Births	% with Spontaneous Labour	% with Induced Labour
Winnipeg	3063	72.2	27.9	2888	72.4	27.6
Brandon	208	72.6	27.2	176	68.2	31.8
North Eastman	146	72.6	27.4	179	68.7	31.3
South Eastman	220	69.6	30.5	240	54.2	35.8
Interlake	300	77.0	23.0	334	70.1	29.9
Central	358	72.9	27.1	403	70.0	30.0
Marquette	113	81.4	18.6	140	53.6	46.4
South Westman	121	67.8	32.3	105	58.1	41.9
Parkland	160	74.4	25.6	169	75.7	24.3
Norman	148	72.3	27.7	158	72.8	27.2
Burntwood	303	73.3	26.7	387	71.3	26.7
Churchill	12	Unstable	Unstable	3	Unstable	Unstable
Manitoba	5152	72.7	27.3	5182	70.6	29.4

The majority of preterm births (about 2/3) occur between 34 and 36 weeks gestation. While the proportion of very preterm births (prior to 34 weeks) has remained the same, there is some regional variation. In particular, while Marquette saw a considerable decrease in the proportion of preterm births born prior to 34 weeks, Central and Norman saw significant increases.

Percent of Preterm (<37 weeks gestation) Births by Gestational Age and Maternal Regional Health Authority (RHA)

	1989-1993			1994-1998		
RHA	Number of Preterm Births	% born at <34 weeks Gestation	% born at 34-36 weeks Gestation	Number of Preterm Births	% born at <34 weeks Gestation	% born at 34-36 weeks Gestation
Winnipeg	3063	32.4	67.7	2888	31.2	68.8
Brandon	208	28.9	71.2	176	31.3	68.8
North Eastman	146	31.5	68.5	179	36.3	63.7
South Eastman	220	34.6	65.5	240	31.3	68.8
Interlake	300	29.3	70.7	334	28.7	71.3
Central	358	33.8	66.2	403	40.7	59.3
Marquette	113	43.4	56.6	140	30.7	69.3
South Westman	121	26.5	73.6	105	29.5	70.5
Parkland	160	31.3	68.8	169	31.4	68.6
Norman	148	30.4	69.6	158	36.1	63.9
Burntwood	303	27.7	72.3	387	32.6	67.4
Churchill	12	Unstable	Unstable	3	Unstable	Unstable
Manitoba	5152	32.0	68.0	5182	32.1	67.9

Preterm Births (CCA)

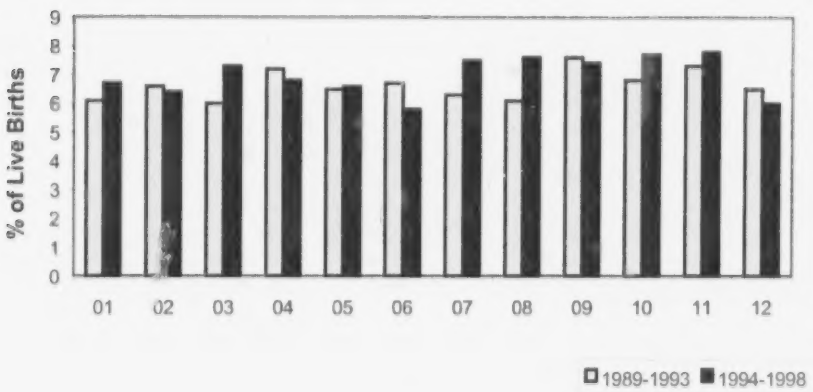
Table 3.14/Figure 3.9

In Winnipeg, the preterm birth rate for 1989-1993 was 6.7%, and this increased to 7.1% during 1994-1998. While these rates have generally increased across the city, particularly in Fort Garry, River East and Seven Oaks, Transcona and River Heights have shown decreases in their preterm birth rate.

Preterm (<37 weeks) Birth Rates in Winnipeg
According to Maternal Community Characterization Area (CCA)

CCA	1989-1993 Number of Preterm Births	1989-1993 Preterm Birth Rate per 100 Live Births	1994-1998 Number of Preterm Births	1994-1998 Preterm Birth Rate per 100 Live Births
01 St. James-Assiniboia	220	6.1	221	6.7
02 Assiniboine South	130	6.6	106	6.4
03 Fort Garry	231	6.0	255	7.3
04 St. Vital	332	7.2	266	6.8
05 St. Boniface	180	6.5	174	6.6
06 Transcona	175	6.7	127	5.8
07 River East	391	6.3	408	7.5
08 Seven Oaks	204	6.1	246	7.6
09 Inkster	204	7.6	179	7.4
10 Point Douglas	273	6.8	260	7.7
11 Downtown	484	7.3	451	7.8
12 River Heights	243	6.5	195	6.0

Preterm Birth Rates by Winnipeg CCA



Preterm Births (CCA)

Tables 3.15 and 3.16

About 70% of all preterm births within Winnipeg have a spontaneous labour, and this proportion has remained steady across time. There are some community variations across time, with Assiniboine South and Point Douglas showing considerable decreases, while Seven Oaks, Fort Garry, and River East have seen increases in the proportion of preterm births with induced labour.

Percent of Preterm (<37 weeks gestation) Births by Type of Labour and Maternal Community Characterization Area (CCA)

	1989-1993			1994-1998		
CCA	Number of Preterm Births	% with Spontaneous Labour	% with Induced Labour	Number of Preterm Births	% with Spontaneous Labour	% with Induced Labour
01 St. James-Assiniboia	220	73.6	26.4	221	76.9	23.1
02 Assiniboine South	130	70.8	29.2	106	79.3	20.8
03 Fort Garry	231	73.2	26.8	255	68.2	31.8
04 St. Vital	332	69.3	30.7	266	71.4	28.6
05 St. Boniface	180	71.7	28.3	174	69.0	31.0
06 Transcona	175	70.3	29.7	127	70.1	29.9
07 River East	391	74.4	25.6	408	69.4	30.6
08 Seven Oaks	204	71.1	28.9	246	65.9	34.2
09 Inkster	204	68.6	31.4	179	73.2	26.8
10 Point Douglas	273	71.1	28.9	260	80.0	20.0
11 Downtown	484	75.0	25.0	451	77.4	22.6
12 River Heights	243	71.6	28.4	195	67.7	32.3

The majority of preterm births occur between 34 and 36 weeks gestation. The proportion of very preterm births (prior to 34 weeks) has increased over time in Transcona and St. James, while St. Vital and St. Boniface have witnessed considerable decreases.

Percent of Preterm (<37 weeks gestation) Births by Gestational Age and Maternal Community Characterization Area (CCA)

	1989-1993			1994-1998		
CCA	Number of Preterm Births	% born at <34 weeks Gestation	% born at 34-36 weeks Gestation	Number of Preterm Births	% born at <34 weeks Gestation	% born at 34-36 weeks Gestation
01 St. James-Assiniboia	220	25.5	74.5	221	31.7	68.3
02 Assiniboine South	130	41.5	58.5	106	34.0	66.0
03 Fort Garry	231	35.1	64.9	255	34.5	65.5
04 St. Vital	332	37.0	63.0	266	25.2	74.8
05 St. Boniface	180	40.6	59.4	174	29.3	70.7
06 Transcona	175	33.1	66.9	127	40.2	59.8
07 River East	391	32.7	67.3	408	31.1	68.9
08 Seven Oaks	204	27.5	72.5	246	28.5	71.5
09 Inkster	204	28.9	71.1	179	27.9	72.1
10 Point Douglas	273	27.5	72.5	260	26.9	73.1
11 Downtown	484	31.2	68.8	451	33.3	66.7
12 River Heights	243	32.1	67.9	195	35.9	64.1

Preterm Births (NRN)

Table 3.17

Examining preterm births within the city at the NRN-level reveals interesting neighbourhood and time differences. The preterm birth rate for the city of Winnipeg increased over the two time periods, from 6.7% in 1989-1993 to 7.1% in 1994-1998, and this increase was seen in most neighbourhoods. While Point Douglas B had the highest preterm birth rate across both time periods, River East A, St. James-Assiniboia B, and Fort Garry B showed the greatest increases across time. In fact, the preterm birth rates for these three neighbourhoods was lower than the city rate during the 1989-1993 time frame, but surpassed the city's rate during the later time period.

Preterm (<37 weeks) Birth Rates in Winnipeg
According to Maternal Neighbourhood Resource Networks (NRN)

	1989-1993		1994-1998	
NRN	Number of Preterm Births	Preterm Birth Rate per 100 Live Births	Number of Preterm Births	Preterm Birth Rate per 100 Live Births
002 Assiniboine South	130	6.6	106	6.4
006 Transcona	175	6.7	127	5.8
01A St. James-Assiniboia	116	6.4	87	5.5
01B St. James-Assiniboia	104	5.8	134	7.8
03A Fort Garry	102	6.7	99	7.0
03B Fort Garry	129	5.6	156	7.6
04A St. Vital	147	7.4	134	7.5
04B St. Vital	185	7.0	132	6.2
05A St. Boniface	66	6.3	65	6.7
05B St. Boniface	114	6.7	109	6.5
07A River East	98	5.8	122	8.4
07B River East	144	6.3	133	6.7
07C River East	140	6.9	138	7.6
07D River East	9	Unstable	15	Unstable
08A Seven Oaks	85	6.2	88	7.1
08B Seven Oaks	118	6.3	144	7.7
08C Seven Oaks	1	Unstable	14	Unstable
09A Inkster	106	7.3	95	7.3
09B Inkster	98	7.9	84	7.6
10A Point Douglas	133	5.8	144	7.0
10B Point Douglas	140	8.3	116	8.9
11A Downtown	242	7.3	213	7.0
11B Downtown	242	7.4	238	8.7
12A River Heights	147	6.5	105	5.2
12B River Heights	96	6.4	90	7.4

Preterm Births per 100 Live Births

Figure 3.10

Preterm (<37 weeks) Birth Rate per 100 Live Births, 1994-1998

Low Birth Weights (RHA)

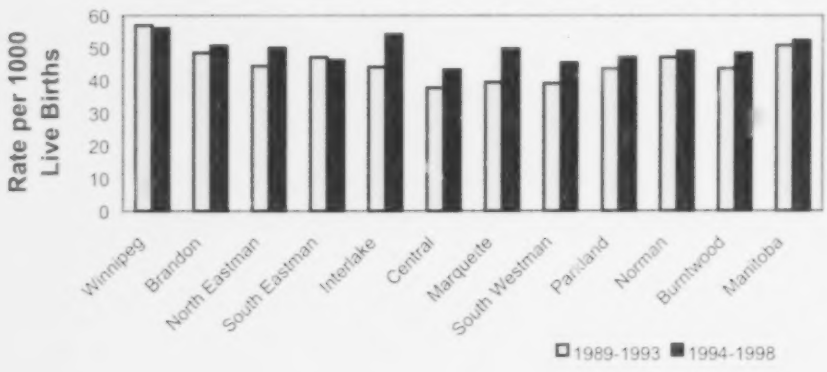
Table 3.18/Figure 3.11

Across the last 10 years the provincial low birth weight rate has stayed fairly constant, with about 5% of all live births weighing less than 2500g. Despite the provincial consistency, there is some regional variation across time. The Interlake and Marquette in particular have seen an overall increase in low birth weight babies. Additionally, Brandon, Interlake, and Central are showing increases in the rate of babies born at less than 1500g.

Regional Low Birth Weight (<2500g) Rates
According to Maternal Regional Health Authority (RHA)

RHA	Year Group 1989 – 1993			Year Group 1994 - 1998		
	<1500g	1500-2499g	Total Low Birth Weight	<1500g	1500-2499g	Total Low Birth Weight
Winnipeg	473	2127	2600	426	1841	2267
per 1000 live births	10.3	46.4	56.8	10.5	45.4	55.9
Brandon	28	135	163	31	119	150
per 1000 live births	8.3	40.0	48.4	10.5	40.2	50.6
North Eastman	27	94	121	26	101	127
per 1000 live births	9.9	34.5	44.4	10.2	39.7	49.9
South Eastman	41	138	179	40	125	165
per 1000 live births	10.7	36.1	46.9	11.2	35.0	46.2
Interlake	32	177	209	55	182	237
per 1000 live births	6.7	37.3	44.0	12.5	41.5	54.0
Central	64	212	276	86	218	304
per 1000 live births	8.7	28.9	37.7	12.2	31.0	43.2
Marquette	24	63	87	17	79	96
per 1000 live births	10.9	28.5	39.4	8.8	40.9	49.6
South Westman	15	71	86	18	66	84
per 1000 live births	6.8	32.2	39.0	9.7	35.6	45.3
Parkland	26	93	119	12	102	114
per 1000 live births	9.5	34.0	43.6	5.0	42.1	47.1
Norman	18	95	113	6	102	108
per 1000 live births	7.5	39.5	47.0	2.7	46.2	48.9
Burntwood	36	215	251	47	216	263
per 1000 live births	6.2	37.3	43.6	8.6	39.6	48.2
Churchill	5	8	13	0	3	3
per 1000 live births	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
Manitoba	789	3428	4217	764	3154	3918
per 1000 live births	9.5	41.2	50.7	10.2	42.0	52.2

Regional Low Birth Weight (<2500g) Rates



Low Birth Weights (CCA)

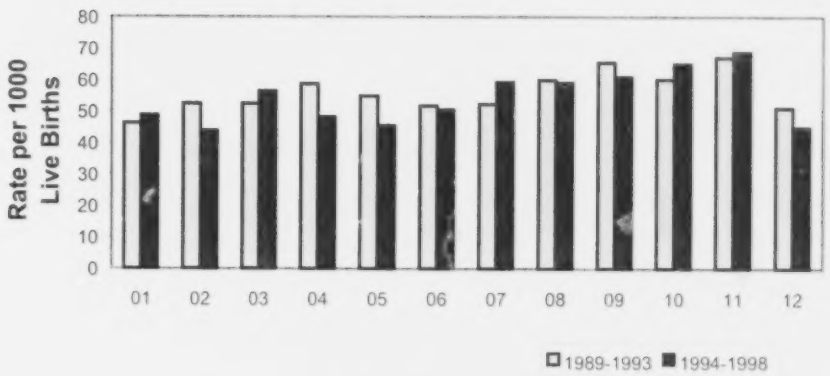
Table 3.19/Figure 3.12

Although the low birth weight rate for Winnipeg is about 5.5%, clearly some communities within the city (e.g. Inkster, Point Douglas and Downtown) have higher rates across both time periods. Many communities showed encouraging decreases in their birth rates for babies born at less than 1500g, although Fort Garry, Seven Oaks, and Downtown showed increases in these very low birth weight births.

Low Birth Weight (<2500g) Rates for Winnipeg Women
According to Community Characterization Area (CCA)

CCA	Year Group 1989 – 1993			Year Group 1994 - 1998		
	<1500g	1500-2499g	Total Low Birth Weight	<1500g	1500-2499g	Total Low Birth Weight
01 St. James -Assiniboia	21	145	166	32	128	160
per 1000 live births	5.8	40.4	46.2	9.7	38.9	48.6
02 Assiniboine South	24	79	103	19	53	72
per 1000 live births	12.2	40.2	52.4	11.6	32.2	43.8
03 Fort Garry	30	170	200	45	150	195
per 1000 live births	7.9	44.6	52.4	13.0	43.3	56.3
04 St. Vital	47	224	271	23	166	189
per 1000 live births	10.2	48.5	58.6	5.9	42.3	48.2
05 St. Boniface	31	120	151	21	99	120
per 1000 live births	11.2	43.5	54.8	7.9	37.4	45.3
06 Transcona	30	104	134	27	84	111
per 1000 live births	11.6	40.1	51.6	12.3	38.1	50.4
07 River East	71	252	323	63	260	323
per 1000 live births	11.5	40.7	52.1	11.6	47.7	59.2
08 Seven Oaks	26	173	199	38	153	191
per 1000 live births	7.8	52.1	59.9	11.7	47.2	59.0
09 Inkster	36	140	176	24	122	146
per 1000 live births	13.4	52.1	65.5	10.0	50.9	60.9
10 Point Douglas	45	195	240	29	189	218
per 1000 live births	11.2	48.7	60.0	8.6	56.3	65.0
11 Downtown	68	375	443	80	316	396
per 1000 live births	10.3	56.8	67.1	13.9	54.8	68.7
12 River Heights	45	147	192	24	121	145
per 1000 live births	12.0	39.1	51.0	7.4	37.4	44.8

Low Birth Weight (<2500g) Rates by Winnipeg CCA



Low Birth Weights (NRN)

Table 3.20

Many neighbourhoods within the city saw encouraging decreases in their low birth weight (LBW) rates across the ten years shown.

Low Birth Weight (<2500g) Rates for Winnipeg Women According to Neighbourhood Resource Network (NRN)

NRN	Year Group 1989 – 1993			Year Group 1994 - 1998		
	<1500g	1500-2499g	Total Low Birth Weight	<1500g	1500-2499g	Total Low Birth Weight
001 Assiniboine South	24	79	103	19	53	72
per 1000 live births	12.2	40.2	52.4	11.6	32.2	43.8
006 Transcona	30	104	134	27	84	111
per 1000 live births	11.6	40.1	51.6	12.3	38.1	50.4
01A St. James-Assiniboia	8	83	91	9	47	56
per 1000 live births	4.4	46.1	50.6	5.7	29.9	35.6
01B St. James-Assiniboia	13	62	75	23	81	104
per 1000 live births	7.3	34.6	41.9	13.4	47.1	60.4
03A Fort Garry	11	66	77	18	55	73
per 1000 live births	7.3	43.7	50.9	12.8	39.0	51.8
03B Fort Garry	19	104	123	27	95	122
per 1000 live births	8.3	45.2	53.4	13.1	46.2	59.3
04A St. Vital	20	103	123	13	79	92
per 1000 live births	10.1	51.8	61.8	7.3	44.2	51.4
04B St. Vital	27	121	148	10	87	97
per 1000 live births	10.3	45.9	56.2	4.7	40.7	45.4
05A St. Boniface	12	48	60	5	36	41
per 1000 live births	11.4	45.7	57.1	5.1	37.0	42.1
05B St. Boniface	19	72	91	16	63	79
per 1000 live births	11.1	42.2	53.3	9.6	37.6	47.2
07A River East	10	79	89	22	80	102
per 1000 live births	5.9	46.7	52.7	15.1	54.8	69.9
07B River East	26	91	117	22	82	104
per 1000 live births	11.4	39.9	51.3	11.1	41.5	52.7
07C River East	34	81	115	19	93	112
per 1000 live births	16.7	39.8	56.5	10.4	51.1	61.5
07D River East	1	1	2	0	5	5
per 1000 live births	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
08A Seven Oaks	14	71	85	21	57	78
per 1000 live births	10.2	51.6	61.7	17.0	46.0	63.0
08B Seven Oaks	12	98	110	15	93	108
per 1000 live births	6.4	52.4	58.8	8.1	49.9	58.0
08C Seven Oaks	0	4	4	2	3	5
per 1000 live births	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
09A Inkster	15	71	86	10	64	74
per 1000 live births	10.3	48.9	59.2	7.7	49.3	57.0
09B Inkster	21	69	90	14	58	72
per 1000 live births	17.0	55.8	72.8	12.7	52.8	65.5
10A Point Douglas	24	96	120	21	112	133
per 1000 live births	10.4	41.5	51.9	10.2	54.7	64.9
10B Point Douglas	21	99	120	8	77	85
per 1000 live births	12.4	58.6	71.0	6.1	58.9	65.0
11A Downtown	33	196	229	40	148	188
per 1000 live births	9.9	58.9	68.9	13.2	49.0	62.2
11B Downtown	35	179	214	40	168	208
per 1000 live births	10.7	54.7	65.4	14.6	61.2	75.8
12A River Heights	26	78	104	9	66	75
per 1000 live births	11.5	34.6	46.1	4.5	32.8	37.2
12B River Heights	19	69	88	15	55	70
per 1000 live births	12.6	45.8	58.4	12.3	45.1	57.4

High Birth Weights (RHA)

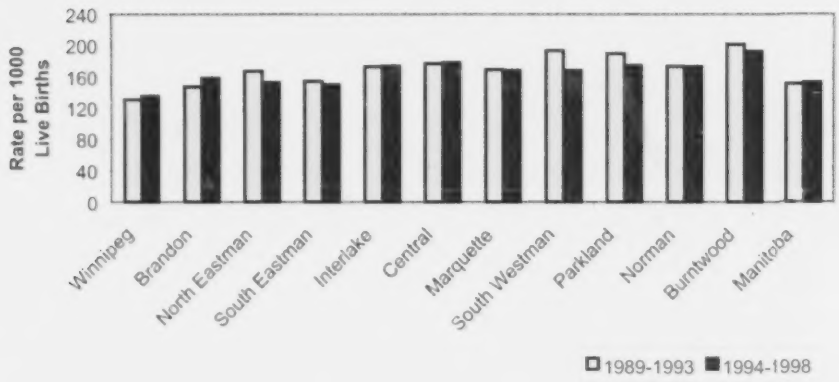
Table 3.21/Figure 3.13

Each year, about 15% of babies are born weighing more than 4000g, although the rates vary considerably by region. Across the last ten years many of the RHAs have seen decreases in their high birth weight rates. Unfortunately, much of this decrease is in the 4000-4499g group, with little changes in the rates of very high birth weight (>4499g) births. The exception to this is Burntwood, which has witnessed a decrease in their very high birth weight births.

Regional High Birth Weight (>3999g) Rates
According to Maternal Regional Health Authority (RHA)

RHA	Year Group 1989 - 1993			Year Group 1994 - 1998		
	4000-4499g	>4499g	Total High Birth Weight	4000-4499g	>4499g	Total High Birth Weight
Winnipeg	5054	933	5987	4590	897	5487
per 1000 live births	110.3	20.4	130.7	113.2	22.1	135.3
Brandon	427	70	497	419	80	499
per 1000 live births	126.7	20.8	147.4	141.4	27.0	168.4
North Eastman	384	71	455	338	50	388
per 1000 live births	140.9	26.1	167.0	132.8	19.6	152.5
South Eastman	492	97	589	438	97	534
per 1000 live births	128.8	25.4	154.2	122.6	27.1	149.7
Interlake	673	146	819	626	135	761
per 1000 live births	141.8	30.8	172.6	142.7	30.8	173.4
Central	1085	208	1293	1024	227	1251
per 1000 live births	148.2	28.4	176.6	145.5	32.3	177.8
Marquette	317	56	373	265	59	324
per 1000 live births	143.6	25.4	169.0	137.0	30.5	167.5
South Westman	341	85	426	249	62	311
per 1000 live births	154.6	38.5	193.2	134.3	33.4	167.8
Parkland	416	102	518	350	73	423
per 1000 live births	152.3	37.3	189.6	144.4	30.1	174.6
Norman	350	66	416	313	68	381
per 1000 live births	145.6	27.5	173.0	141.7	30.8	172.5
Burntwood	899	261	1160	842	209	1051
per 1000 live births	156.0	45.3	201.3	154.2	38.3	192.5
Churchill	19	8	27	27	4	31
per 1000 live births	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
Manitoba	10457	2103	12560	9481	1961	11442
per 1000 live births	125.6	25.3	150.9	126.3	26.1	152.5

Regional High Birth Weight (>3999g) Rates, 1994-1998



High Birth Weights (CCA)

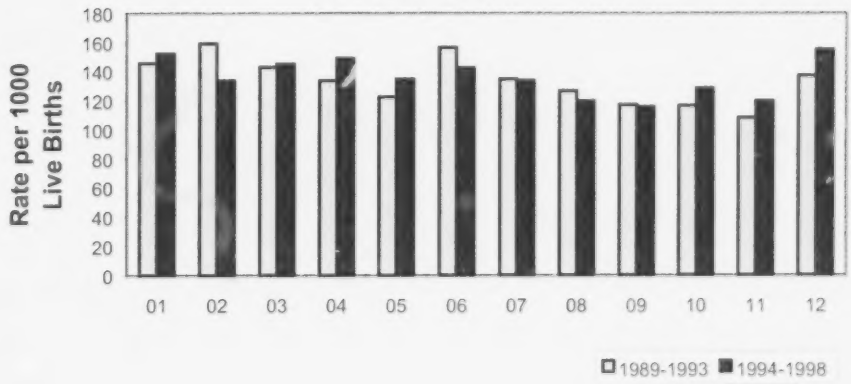
Table 3.22/Figure 3.14

Similar to the provincial picture, there is also area variation for high birth weight (HBW) rates within the city. The rates generally fluctuate between 11% and 15%, with the overall rate for Winnipeg being about 13%. There has been a slight increase in the HBW rate for the city and for most of the CCA, although the magnitude of this increase is fairly small.

High Birth Weight (>3999g) Rates for Winnipeg Women
According to Community Characterization Area (CCA)

CCA	Year Group 1989 - 1993			Year Group 1994 - 1998		
	4000-4499g	>4499g	Total High Birth Weight	4000-4499g	>4499g	Total High Birth Weight
01 St. James -Assiniboia	449	75	524	427	75	502
per 1000 live births	125.0	20.9	145.9	129.6	22.8	152.4
02 Assiniboine South	262	51	313	181	39	133.7
per 1000 live births	133.4	26.0	159.4	110.0	23.7	133.7
03 Fort Garry	476	69	545	428	75	503
per 1000 live births	124.8	18.1	142.9	123.5	21.6	145.1
04 St. Vital	517	101	618	488	97	585
per 1000 live births	111.8	21.8	133.7	124.4	24.7	149.1
05 St. Boniface	285	53	338	288	69	357
per 1000 live births	103.4	19.2	122.6	108.8	26.1	134.8
06 Transcona	343	63	406	268	46	314
per 1000 live births	132.1	24.3	156.4	121.7	20.9	142.5
07 River East	680	154	834	613	116	729
per 1000 live births	109.7	24.9	134.6	112.4	21.3	133.7
08 Seven Oaks	360	61	421	337	50	387
per 1000 live births	108.4	18.4	126.7	104.0	15.4	119.5
09 Inkster	264	51	315	216	61	277
per 1000 live births	98.2	19.0	117.1	90.1	25.4	115.6
10 Point Douglas	401	64	465	353	77	430
per 1000 live births	100.2	16.0	116.2	105.2	22.9	128.1
11 Downtown	607	106	713	568	120	688
per 1000 live births	92.0	16.1	108.0	98.5	20.8	119.3
12 River Heights	430	86	516	428	73	501
per 1000 live births	114.3	22.9	137.1	132.3	22.6	154.9

High Birth Weight (>3999g) Rates by Winnipeg CCA,
1994-1998



High Birth Weights (NRN)

Table 3.23

High birth weight rates by neighbourhood tend to cluster around 13% with little variation by NRN or across time periods.

High Birth Weight (>3999g) Rates for Winnipeg Women According to Neighbourhood Resource Network (NRN)

NRN	Year Group 1989 - 1993			Year Group 1994 - 1998		
	4000-4499g	>4500g	Total High Birth Weight	4000-4499g	>4500g	Total High Birth Weight
002 Assiniboine South	262	51	313	181	39	220
per 1000 live births	133.4	26.0	159.4	110.0	23.7	133.7
006 Transcona	343	63	406	268	46	314
per 1000 live births	132.1	24.3	156.4	121.7	20.9	142.5
01A St. James-Assiniboia	236	38	274	204	42	246
per 1000 live births	131.1	21.1	152.2	129.7	26.7	156.4
01B St. James-Assiniboia	213	37	250	223	33	256
per 1000 live births	118.9	20.7	139.6	129.6	19.2	148.8
03A Fort Garry	209	31	240	177	33	210
per 1000 live births	138.2	20.5	158.7	125.5	23.4	148.9
03B Fort Garry	267	38	305	251	42	293
per 1000 live births	116.0	16.5	132.5	122.1	20.4	142.5
04A St. Vital	210	52	262	209	46	255
per 1000 live births	105.6	26.1	131.7	116.8	25.7	142.5
04B St. Vital	307	49	356	279	51	330
per 1000 live births	116.6	18.6	135.2	130.7	23.9	154.6
05A St. Boniface	110	19	129	114	27	141
per 1000 live births	104.8	18.1	122.9	117.2	27.7	144.9
05B St. Boniface	175	34	209	174	42	216
per 1000 live births	102.5	19.9	122.4	103.9	25.1	129.0
07A River East	165	43	208	156	31	187
per 1000 live births	97.6	25.4	123.1	106.9	21.2	128.2
07B River East	271	58	329	238	42	280
per 1000 live births	118.9	25.4	144.4	120.6	21.3	141.8
07C River East	217	46	263	195	40	235
per 1000 live births	106.6	22.6	129.2	107.1	22.0	129.0
07D River East	27	7	34	24	3	27
per 1000 live births	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
08A Seven Oaks	143	24	167	110	20	130
per 1000 live births	103.8	17.4	121.3	88.9	16.2	105.0
08B Seven Oaks	208	37	245	208	28	236
per 1000 live births	111.2	19.8	130.9	111.7	15.0	126.7
08C Seven Oaks	9	0	9	19	2	21
per 1000 live births	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
09A Inkster	133	20	153	116	30	146
per 1000 live births	91.6	13.8	105.4	89.4	23.1	112.5
09B Inkster	131	31	162	100	31	131
per 1000 live births	105.9	25.1	131.0	91.0	28.2	119.2
10A Point Douglas	244	33	277	215	49	264
per 1000 live births	105.6	14.3	119.9	104.9	23.9	128.8
10B Point Douglas	157	31	188	138	28	166
per 1000 live births	92.9	18.3	111.2	105.6	21.4	127.0
11A Downtown	308	60	368	287	56	343
per 1000 live births	92.6	18.0	110.6	94.9	18.5	113.5
11B Downtown	299	46	345	281	64	345
per 1000 live births	91.3	14.1	105.4	102.4	23.3	125.7
12A River Heights	271	48	319	263	46	309
per 1000 live births	120.1	21.3	141.3	130.6	22.8	153.4
12B River Heights	159	38	197	165	27	192
per 1000 live births	105.6	25.2	130.8	135.2	22.1	157.4

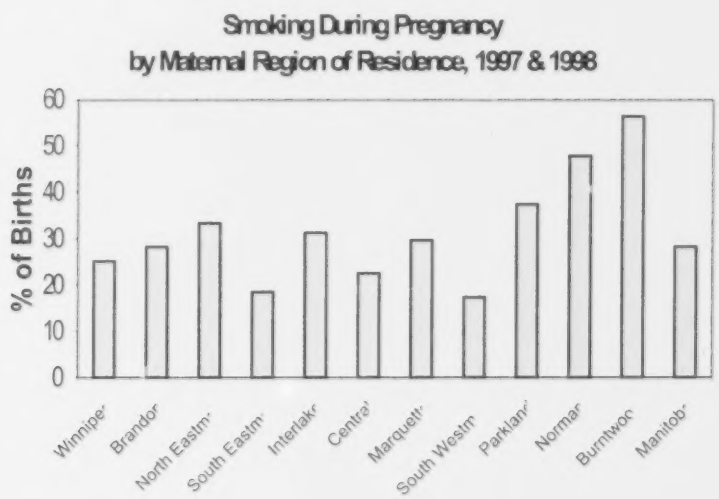
Smoking During Pregnancy (RHA)

Table 3.24/Figure 3.15

Data obtained from the Post-Partum Referral Forms suggests that more than one-quarter of Manitoba women smoked during their pregnancy for 1997 and 1998. There is some regional variation, with Norman and Burntwood in particular reporting considerably higher smoking during pregnancy rates.

Reported Smoking During Pregnancy
According to Maternal Regional Health Authority (RHA)
1997 & 1998

RHA	Number of Women Smoking During Pregnancy	% Smoking During Pregnancy
Winnipeg	2725	25.1
Brandon	256	28.2
North Eastman	184	33.3
South Eastman	177	18.4
Interlake	372	31.2
Central	430	22.5
Marquette	150	29.6
South Westman	88	17.3
Parkland	252	37.3
Norman	229	47.9
Burntwood	736	56.4
Churchill	12	Unstable
Manitoba	5611	28.2



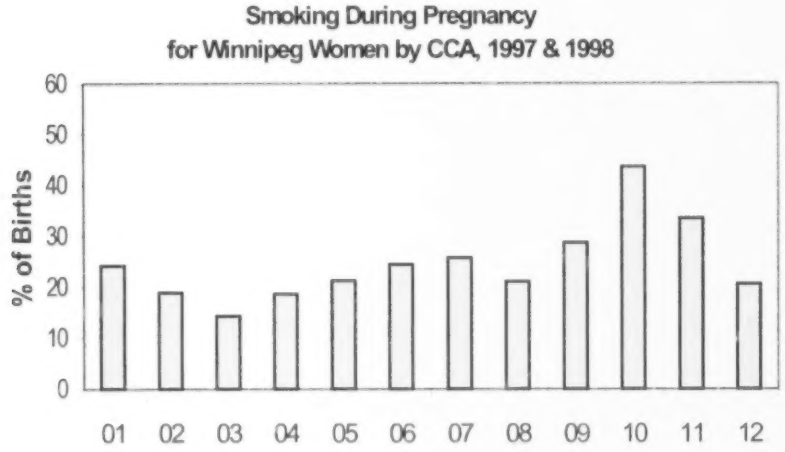
Smoking During Pregnancy (CCA)

Table 3.25/Figure 3.16

About 25% of women living in Winnipeg in 1997 and 1998 reported smoking during their pregnancy. There is substantial variation by community, with smoking during pregnancy rates as low as 14% in Fort Garry and as high as 43% in the Point Douglas CCA.

Reported Smoking During Pregnancy for Winnipeg Women According to Maternal Community Characterization Area (CCA) 1997 & 1998

CCA	Number of Women Smoking During Pregnancy	% Smoking During Pregnancy
01 St. James-Assiniboia	241	24.2
02 Assiniboine South	77	18.9
03 Fort Garry	146	14.3
04 St. Vital	194	18.6
05 St. Boniface	172	21.2
06 Transcona	136	24.4
07 River East	394	25.7
08 Seven Oaks	145	21.0
09 Inkster	157	28.7
10 Point Douglas	369	43.6
11 Downtown	505	33.5
12 River Heights	189	20.6



Smoking During Pregnancy (NRN)

Table 3.26

Variation in smoking during pregnancy rates is apparent when examining Winnipeg at the neighbourhood level. Rates vary from lows of 11% (Fort Garry A) to highs of 54% (Point Douglas B).

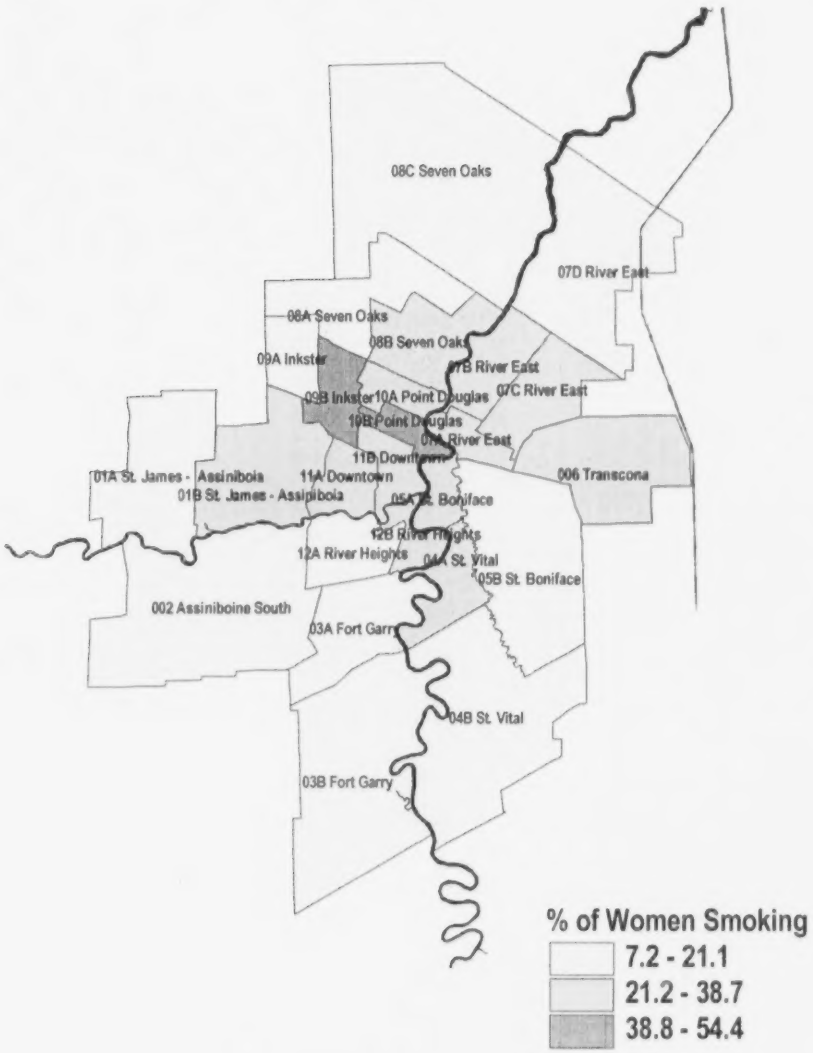
Reported Smoking During Pregnancy for Winnipeg Women According to Maternal Neighbourhood Resource Network (NRN) 1997 & 1998

NRN	Number of Women Smoking During Pregnancy	% Smoking During Pregnancy
002 Assiniboine South	77	18.9
006 Transcona	136	24.4
01A St. James-Assiniboia	100	21.1
01B St. James-Assiniboia	141	27.1
03A Fort Garry	52	11.6
03B Fort Garry	94	16.4
04A St. Vital	120	25.2
04B St. Vital	74	13.1
05A St. Boniface	86	26.8
05B St. Boniface	86	17.5
07A River East	146	36.3
07B River East	128	22.4
07C River East	115	23.6
07D River East	5	Unstable
08A Seven Oaks	51	19.5
08B Seven Oaks	91	23.4
08C Seven Oaks	3	Unstable
09A Inkster	44	14.3
09B Inkster	113	47.1
10A Point Douglas	197	37.2
10B Point Douglas	172	54.4
11A Downtown	262	29.8
11B Downtown	243	38.7
12A River Heights	78	13.9
12B River Heights	111	31.1

Smoking During Pregnancy

Figure 3.17

Percent of Winnipeg Women Who Smoke During Their Pregnancy 1997 and 1998



Maternal Health - Discussion

Maternal Health is a key component of the overall perinatal health of a population. Factors influencing maternal health include the presence of medical conditions, nutritional status, the adequacy of prenatal care and personal practices such as smoking, alcohol, and other drug use during pregnancy. Poor maternal health is reflected in high rates of preterm birth and low birth weight, with the high infant morbidity and mortality that accompanies these pregnancy outcomes. In Manitoba, from 1989 to 1998, 4.02 of every 1,000 pregnancies that reach 28 weeks gestation result in fetal or infant death where the birth weight was less than 1,500 grams. This represents approximately 38% of the feto-infant mortality that occurs in pregnancies that reach 28 weeks gestation (see Chapter 2, Figure 2.2).

The last several years have witnessed an increase in births to women 35 years of age and older, both across the province and within Winnipeg. From 1989 to 1993 about 8% of all births were to women over the age of 34 years. During the subsequent 5-year period, this proportion had increased to almost 11%. The changing demographic of delivering women in the province has likely impacted upon the overall feto-infant mortality rate in the Maternal Health programme area. As the 1985-1996 Provincial Perinatal Surveillance Report indicated, older women in Manitoba tend to have higher rates of ectopic pregnancy, molar pregnancy, and low and high birth weight births. In addition to an increased proportion in the number of births to women over 34 years, some areas have seen an increase in their teen pregnancy rate. Across the province, about 6% of all pregnancies are to women between 15 and 19 years of age, with higher rates in the northern regions of the province and in the inner city section of Winnipeg.

Some of the feto-infant outcomes that may influence higher Maternal Health feto-infant mortality rates include preterm births, stillbirths, and low birth weight. Preterm birth rates have increased across almost all of the province and within most areas of Winnipeg. Stillbirth rates for both Manitoba and the city have also risen slightly over the past 10 years, although more so for the Interlake and Norman RHA and the Seven Oaks and Point Douglas city areas. The low birth weight rates have remained fairly stable over the last 10 years.

Many factors can influence a population's maternal health indicators. One important factor relates to the age of delivering women. Central and Marquette RHAs have a greater proportion of women 35 years and older delivering, while Parkland and Norman have a greater proportion of women under 18 years delivering. This may partly explain why Central and Marquette RHAs have higher feto-infant mortality rates in the maternal health area compared to Parkland and Norman.

A surveillance system that captures the determinants of Maternal Health as well as the outcomes may help explain why some regions have comparable stillbirth, preterm birth, and low birth weight rates, yet have higher Maternal Health feto-infant mortality rates. Of potential health determinants, only maternal smoking, collected on the Post-Partum Referral Form, is currently routinely surveyed by the province. For this report we have available only preliminary smoking information for 1997 and 1998. These data indicate that about one-quarter of Manitoba women smoked while pregnant, and this figure is considerably higher in the northern regions of the province and in the inner city.

Maternal Health - Discussion

The epidemiological literature suggests that smoking is a risk factor for preterm birth and low birth weight. Our data indicate that while the preterm (<37 weeks gestation) birth rate for the province from 1997-1998 was 7.6 per 100 births, the pre-term birth rate among women who smoked during their pregnancy was 9.5 per 100 births. Similarly, while the provincial low birth weight (<2500g) rate for 1997-1998 was 5.2 per 100 births, the low birth weight rate for women who smoked during their pregnancy was 6.9 per 100 births. Additional variables that are not routinely captured at this time, but would likely enhance our understanding of the determinants of Maternal Health include maternal education, maternal nutrition, quality and quantity of prenatal care, access to quality prenatal care, and social support.

CHAPTER FOUR

MATERNAL CARE

Rates of Analgesia/Anaesthesia (RHA)

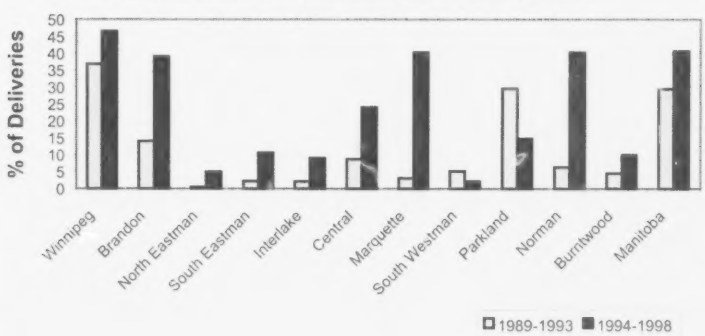
Table 4.1/Figure 4.1

During the 1989-1993 time period about 36% of all hospital deliveries were assisted by either general or regional analgesia/anaesthesia. By the 1994-1998 time period this figure rose to almost 45%. With the exception of Burntwood and Parkland, this increase in analgesia/anaesthesia assisted labour is seen in every region, although most profoundly in Brandon, Central, Marquette, and Norman. These increases are entirely due to increased rates of epidural/spinal analgesia/anaesthesia, with rates of general inhalation and pudendal blocks dropping dramatically in all RHAs.

Regional Rates of Analgesia/Anaesthesia for Deliveries According to Regional Health Authority (RHA) of Delivering Hospital

	Year Group 1989 – 1993				Year Group 1994 - 1998			
RHA	None	General Inhalation	Epidural/ Spinal	Pudendal Block	None	General Inhalation	Epidural/ Spinal	Pudendal Block
Winnipeg	33788	1716	20998	531	27306	902	24708	146
% of deliveries	59.2	3.0	36.8	0.9	51.5	1.7	46.6	0.3
Brandon	4046	622	784	103	2833	325	2064	55
% of deliveries	72.8	11.2	14.1	1.9	53.7	6.2	39.1	1.0
North Eastman	190	1	1	0	93	5	5	0
% of deliveries	99.0	0.5	0.5	0	90.3	4.9	4.9	0
South Eastman	1304	46	31	4	1448	16	174	12
% of deliveries	94.2	3.3	2.2	0.3	87.8	1.0	10.6	0.7
Interlake	885	58	21	32	1037	41	109	27
% of deliveries	88.9	5.8	2.1	3.2	85.4	3.4	9.0	2.2
Central	3343	388	359	48	2335	393	871	31
% of deliveries	80.8	9.4	8.7	1.2	64.3	10.8	24.0	0.9
Marquette	586	47	21	14	228	42	182	0
% of deliveries	87.7	7.0	3.1	2.1	50.4	9.3	40.3	0
South Westman	665	124	50	144	248	58	8	75
% of deliveries	67.7	12.6	5.1	14.7	63.8	14.9	2.1	19.3
Parkland	477	91	245	18	1181	123	226	11
% of deliveries	57.4	11.0	29.5	2.2	76.6	8.0	14.7	0.7
Norman	855	303	84	96	317	112	289	0
% of deliveries	63.9	22.7	6.3	7.2	44.2	15.6	40.3	0
Burntwood	3051	358	169	199	2497	260	304	3
% of deliveries	80.8	9.5	4.5	5.3	81.5	8.5	9.9	0.1
Churchill	1	0	0	0	6	0	0	0
% of deliveries	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
Manitoba	49656	3801	22763	1189	39657	2277	28940	360
% of deliveries	64.1	4.9	29.4	1.5	55.7	3.2	40.6	0.5

Regional Rates of Epidurals/Spinals for Deliveries



Caesarean Section Rates (RHA)

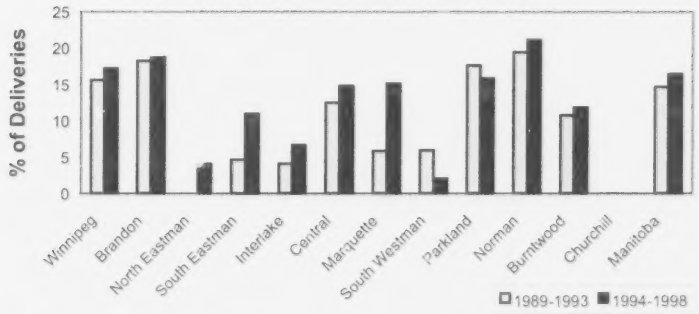
Table 4.2/Figure 4.2

Caesarean section deliveries have increased over time, currently accounting for about 16% of all deliveries, although this rate varies throughout the province. These increases are seen in almost all RHAs, and generally for both scheduled and non-scheduled caesareans.

Regional Caesarean Section Rates
According to Regional Health Authority (RHA) of Delivering Hospital

	Year Group 1989 – 1993			Year Group 1994 - 1998		
RHA	Vaginal	Scheduled Caesarean	Non-Scheduled Caesarean	Vaginal	Scheduled Caesarean	Non-Scheduled Caesarean
Winnipeg	49873	3171	6015	44063	3166	5953
% of deliveries	84.5	5.4	10.2	82.9	6.0	11.2
Brandon	4544	408	604	4297	413	572
% of deliveries	81.8	7.3	10.9	81.4	7.8	10.8
North Eastman	201	0	0	189	2	6
% of deliveries	100.0	0	0	95.9	1.0	3.1
South Eastman	1396	30	39	1535	77	111
% of deliveries	95.3	2.1	2.7	89.1	4.5	6.4
Interlake	1593	32	36	1479	58	47
% of deliveries	95.9	1.9	2.2	93.4	3.7	3.0
Central	4304	279	333	3887	303	368
% of deliveries	87.6	5.7	6.8	85.3	6.7	8.1
Marquette	894	26	29	817	71	74
% of deliveries	94.2	2.7	3.1	84.9	7.4	7.7
South Westman	941	35	24	385	5	3
% of deliveries	94.1	3.5	2.4	98.0	1.3	0.8
Parkland	1970	160	260	1888	125	230
% of deliveries	82.4	6.7	10.9	84.2	5.6	10.3
Norman	1701	145	265	1558	173	243
% of deliveries	80.6	6.9	12.6	78.9	8.8	12.3
Burntwood	3557	126	302	3181	138	288
% of deliveries	89.3	3.2	7.6	88.2	3.8	8.0
Churchill	73	0	0	39	0	0
% of deliveries	100.0	0	0	100.0	0	0
Manitoba	71846	4412	7907	63522	4531	7895
% of deliveries	85.4	5.2	9.4	83.6	6.0	10.4

Regional Rates of Caesarean Deliveries
(Scheduled and Non-Scheduled)



Operative Vaginal Deliveries (RHA)

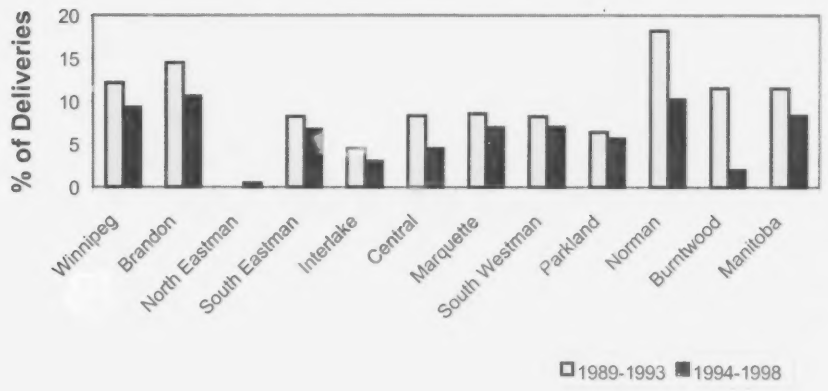
Table 4.3/Figure 4.3

The number of vaginal deliveries that are assisted with forceps and/or vacuum extraction has declined over the last 10 years, resulting in an operative vaginal delivery rate of 8.3%. This decline can be seen in all RHAs, although the decline is clearly more marked for women delivering in Norman and Burntwood.

Regional Rates of Operative Vaginal Deliveries
According to Regional Health Authority (RHA) of Delivering Hospital

	1989-1993		1994-1998	
RHA	Number of Operative Vaginal Deliveries	Rate per 100 Vaginal Deliveries	Number of Operative Vaginal Deliveries	Rate per 100 Vaginal Deliveries
Winnipeg	6025	12.1	4298	9.3
Brandon	659	14.5	469	10.6
North Eastman	0	0	1	0.5
South Eastman	115	8.2	109	6.7
Interlake	72	4.5	45	3.0
Central	356	8.3	179	4.5
Marquette	77	8.6	58	6.9
South Westman	77	8.2	27	7.0
Parkland	126	6.4	111	5.6
Norman	310	18.2	172	10.2
Burntwood	409	11.5	67	2.0
Churchill	4	Unstable	1	Unstable
Manitoba	8251	11.5	5539	8.3

Regional Rates of Operative Vaginal Deliveries



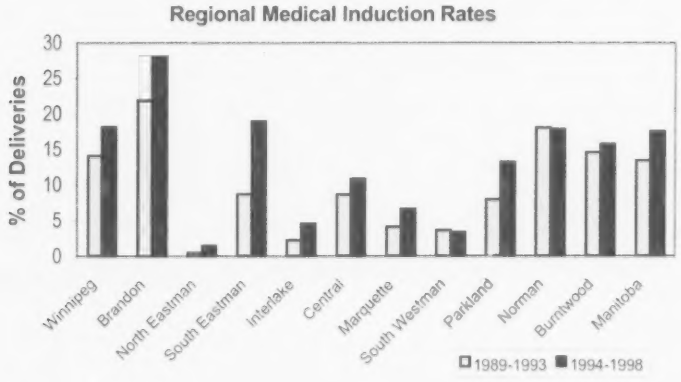
Induction of Labour Rates (RHA)

Table 4.4/Figure 4.4

The number of deliveries that are medically induced has been increasing over time, both for Manitoba, and across all RHAs. Most of the increase has occurred for term deliveries, that is, deliveries between 37 and 41 weeks gestation, with a corresponding decrease in post-dates (past 41 weeks gestation) inductions.

Regional Medical Induction of Labour Rates by Gestational Age According to Regional Health Authority (RHA) of Delivering Hospital

RHA	Year Group 1989 - 1993				Year Group 1994 – 1998			
	<37 weeks	37-41 weeks	>41 weeks	All Medical Inductions	<37 weeks	37-41 weeks	>41 weeks	All Medical Inductions
Winnipeg	852	6381	1074	8307	947	8785	437	10169
% of deliveries	1.4	10.8	1.8	14.1	1.7	15.7	0.8	18.1
Brandon	90	996	133	1219	94	1352	88	1534
% of deliveries	1.6	17.9	2.4	21.9	1.7	24.7	1.6	28.0
North Eastman	0	1	0	1	0	3	0	3
% of deliveries	0.0	0.5	0.0	0.5	0.0	1.5	0.0	1.5
South Eastman	1	98	28	127	7	317	21	345
% of deliveries	0.7	6.7	1.9	8.7	0.4	17.4	1.2	18.9
Interlake	0	22	14	36	1	57	16	74
% of deliveries	0.0	1.3	0.8	2.2	0.1	3.5	1.0	4.5
Central	14	278	130	422	4	428	80	512
% of deliveries	0.3	5.7	2.6	8.6	0.1	9.0	1.7	10.8
Marquette	0	22	17	39	0	51	14	65
% of deliveries	0.0	2.3	1.8	4.1	0.0	5.1	1.4	6.6
South Westman	1	19	16	36	1	11	1	13
% of deliveries	0.1	1.9	1.6	3.6	0.3	2.8	0.3	3.3
Parkland	5	148	35	188	16	273	20	309
% of deliveries	0.2	6.2	1.5	7.9	0.7	11.6	0.9	13.2
Norman	2	345	32	379	12	358	14	384
% of deliveries	0.1	16.3	1.5	18.0	0.6	16.7	0.7	17.9
Burntwood	25	498	53	576	34	540	27	601
% of deliveries	0.6	12.5	1.3	14.5	0.9	14.1	0.7	15.7
Churchill	0	0	0	0	0	0	0	0
% of deliveries	--	--	--	--	--	--	--	--
Manitoba	990	8808	1532	11330	1114	12175	718	14007
% of deliveries	1.2	10.4	1.8	11.4	1.4	15.1	0.9	17.4



Maternal Care - Discussion

The availability and quality of maternal care for labour and delivery is another important component of perinatal health. The quality of maternal care is highly dependent on the availability of well-trained health care personnel and on adequate education and preparation of pregnant women for labour and delivery. One indicator that reflects, in part, the quality of maternal care is the rate of late stillbirths (i.e. where the weight has reached at least 1,500 grams). In Manitoba, for 1989-1998, late stillbirths were responsible for 2.29 deaths per 1,000 pregnancies that reached at least 28 weeks gestation. This represents approximately 23% of the feto-infant mortality that occurs after 28 weeks gestation (see Chapter 2, Figure 2.2). There are some notable regional discrepancies in the feto-infant mortality rate in the Maternal Care section. Burntwood RHA, in particular, has the largest Maternal Care feto-infant mortality rate compared to any other RHA, while Brandon and Marquette RHAs have Maternal Care feto-infant mortality rates that are lower than even the benchmark population (see Chapter 2, Figure 2.2). The extent to which maternal care is responsible for the rate of late stillbirths is not fully known and this assessment is hampered by a decline in the autopsy rate for stillbirths. This has led to a recommendation by the College of Physicians and Surgeons of Manitoba to increase the number of autopsies to better understand the causes of stillbirths and to develop strategies to reduce the stillbirth rate.

There have been notable changes in various aspects of obstetrical care in the past decade. The number of vaginal deliveries that are assisted with forceps and/or vacuum extraction has declined in the province and within every RHA. The rate of operative vaginal deliveries for Manitoba is currently 8.3%, with considerably higher rates in Winnipeg and Norman RHA. The decline in the rate of operative vaginal deliveries may have been influenced by a more liberal approach to the duration of the second stage of labour. Another important trend is the rising rate of the use of epidural/spinal analgesia/anaesthesia for deliveries which is now widespread in the province and is the predominant method of analgesia/anaesthesia. The increase in epidural/spinal analgesia/anaesthesia for deliveries is apparent in all RHA, although most significantly for Brandon, Marquette, and Norman. To better characterize these trends and to assess training needs, the collection of data to distinguish epidural from spinal methods is recommended.

The rate of caesarean section deliveries in the province has increased slightly over the last 10 years. Currently, approximately 16% of all births in Manitoba have a caesarean section delivery, although there is wide regional variation. It will be important to better understand the reasons for the wide regional variations. The rate of medical inductions of labour in the province has also increased. This increase is most pronounced for term deliveries (37 – 41 weeks gestation), but has also increased slightly for deliveries earlier than 37 weeks gestation. There has been a corresponding decline in post-dates (greater than 41 weeks gestation) medical inductions of labour. The reasons for the increase and the impact of medical inductions of labour should be further explored.

CHAPTER FIVE

NEWBORN CARE

Neonatal Deaths (RHA)

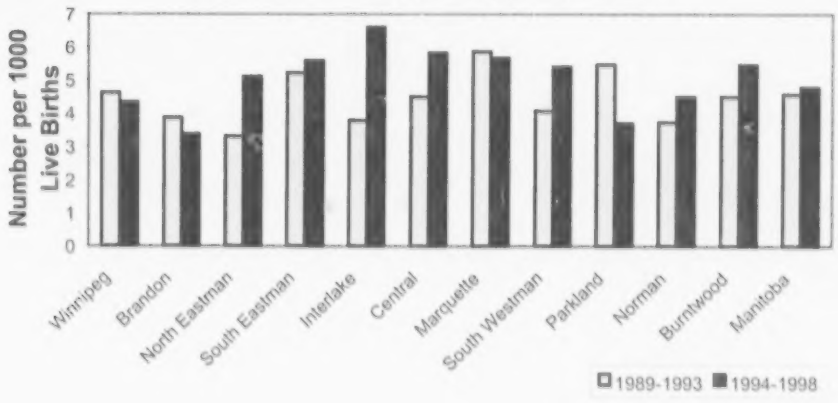
Table 5.1/Figure 51

In Manitoba, less than 5 per 1000 newborns die within the first month of life, and most of these deaths occur during the first 6 days of life. While the provincial neonatal death rate has not changed over time, there have been some regional changes. In particular, North Eastman, Interlake, Central, South Westman, and Burntwood have seen increases, while only Parkland saw a decrease.

Neonatal (<29 days old) Deaths According to Maternal Regional Health Authority (RHA)

RHA	Year Group 1989 - 1993		Year Group 1994 - 1998	
	Died <7 days old	Died 7-28 days old	Died <7 days old	Died 7-28 days old
Winnipeg	188	24	146	30
per 1000 live births	4.1	0.5	3.6	0.7
Brandon	9	4	10	0
per 1000 live births	2.6	1.2	3.3	0.0
North Eastman	8	1	11	2
per 1000 live births	2.9	0.4	4.3	0.8
South Eastman	20	0	15	5
per 1000 live births	5.2	0.0	4.1	1.4
Interlake	16	2	25	4
per 1000 live births	3.4	0.4	5.7	0.9
Central	26	7	33	8
per 1000 live births	3.5	1.0	4.7	1.1
Marquette	11	2	8	3
per 1000 live births	4.7	0.9	3.8	1.4
South Westman	7	2	10	0
per 1000 live births	3.1	0.9	5.2	0.0
Parkland	12	3	7	2
per 1000 live births	4.1	1.0	2.6	0.8
Norman	8	1	9	1
per 1000 live births	3.3	0.4	4.0	0.4
Burntwood	22	4	24	6
per 1000 live births	3.8	0.7	4.3	1.1
Churchill	4	0	0	0
per 1000 live births	Unstable	Unstable	Unstable	Unstable
Manitoba	331	50	298	61
per 1000 live births	3.9	0.6	3.9	0.8

Regional Neonatal (<29 days old) Deaths



Neonatal Deaths (CCA)

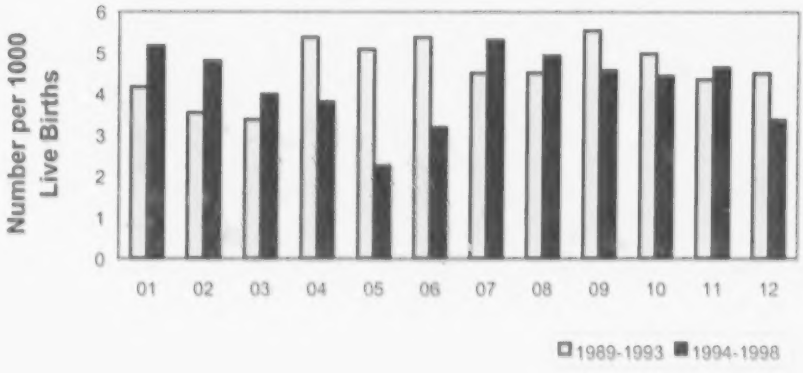
Table 5.2/Figure 5.2

In Winnipeg, about 4.5 per 1000 babies dies within the first month of life, and this rate has changed very little over time. Within the city however, there is some geographic variation. In particular, while St. James-Assiniboia and Assiniboine South have seen an increase in neonatal deaths over the two time periods, St. Vital, St. Boniface, and Transcona have witnessed decreases over time.

Neonatal (< 29 days old) Deaths According to Maternal Community Characterization Area (CCA)

CCA	Year Group 1989 - 1993		Year Group 1994 - 1998	
	Died <7 days old	Died 7-28 days old	Died <7 days old	Died 7-28 days old
01 St. James-Assiniboia	12	3	12	5
per 1000 live births	3.3	0.8	3.6	1.5
02 Assiniboine South	5	2	7	1
per 1000 live births	2.5	1.0	4.2	0.6
03 Fort Garry	13	0	12	2
per 1000 live births	3.4	0.0	3.4	0.6
04 St. Vital	21	4	12	3
per 1000 live births	4.5	0.9	3.0	0.8
05 St. Boniface	13	1	5	1
per 1000 live births	4.7	0.4	1.9	0.4
06 Transcona	10	4	7	0
per 1000 live births	3.8	1.5	3.2	0.0
07 River East	25	3	25	4
per 1000 live births	4.0	0.5	4.6	0.7
08 Seven Oaks	14	1	14	2
per 1000 live births	4.2	0.3	4.3	0.6
09 Inkster	14	1	10	1
per 1000 live births	5.2	0.4	4.1	0.4
10 Point Douglas	18	2	11	4
per 1000 live births	4.5	0.5	3.2	1.2
11 Downtown	26	3	22	5
per 1000 live births	3.9	0.4	3.8	0.9
12 River Heights	17	0	9	2
per 1000 live births	4.5	0.0	2.8	0.6

Neonatal (<29 days old) Deaths by Winnipeg CCA



Neonatal Hospitalizations (RHA)

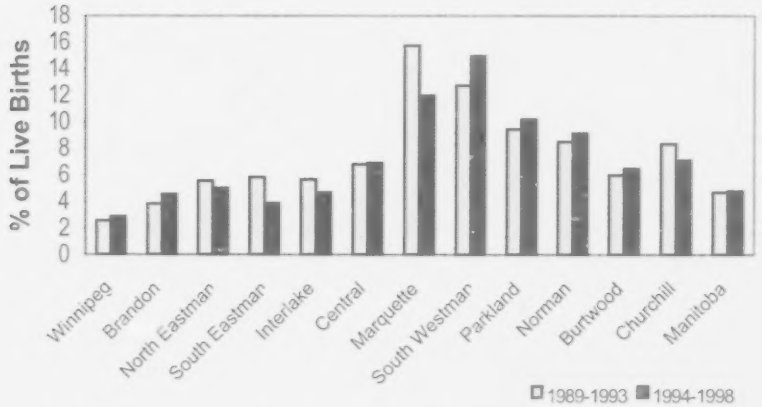
Table 5.3/Figure 5.3

By one month of age, approximately 5% of all newborns are readmitted to hospital. There is considerable regional variation in neonatal hospitalizations, with Marquette and South Westman, in particular, having rates more than twice the provincial average. The neonatal readmission rate for most regions has remained fairly stable over the two time periods, with only slight increases in a couple of regions.

Neonatal (< 29 days old) Hospitalizations According to Maternal Regional Health Authority (RHA)

RHA	Year Group 1989 - 1993		Year Group 1994 - 1998	
	<7 days old	7-28 days old	<7 days old	7-28 days old
Winnipeg	488	693	488	675
% of live births	1.1	1.5	1.2	1.7
Brandon	46	84	68	68
% of live births	1.3	2.5	2.3	2.3
North Eastman	80	73	60	68
% of live births	2.9	2.6	2.3	2.7
South Eastman	150	75	89	52
% of live births	3.9	1.9	2.4	1.4
Interlake	145	125	117	88
% of live births	3.0	2.6	2.7	2.0
Central	305	194	288	199
% of live births	4.2	2.6	4.1	2.8
Marquette	286	79	205	46
% of live births	12.3	3.4	9.8	2.2
South Westman	238	49	230	55
% of live births	10.6	2.2	12.1	2.9
Parkland	117	161	137	132
% of live births	4.0	5.5	5.2	5.0
Norman	101	108	86	121
% of live births	4.1	4.4	3.8	5.3
Burntwood	113	237	115	243
% of live births	1.9	4.0	2.1	4.4
Churchill	6	6	4	4
% of live births	4.2	4.2	3.5	3.5
Manitoba	2075	1884	1887	1751
% of live births	2.5	2.2	2.5	2.3

Regional Rates of Neonatal (<29 days old) Hospitalizations



Cause-Specific Neonatal Hospitalizations (RHA)

Table 5.4

About 50 per 1000 babies (5%) are hospitalized in Manitoba during their first month of life. About 28% of these hospitalizations are due to perinatal conditions, most specifically disorders related to prematurity, and jaundice. 26% of the neonatal readmissions are for health supervision concerns, and an additional 13% are for respiratory infections. Readmission due to health supervision (e.g., infant readmitted because of maternal illness or quality of care concerns) is a particular issue for South Westman and Marquette, accounting for more than two-thirds of all their neonatal readmissions. Readmission due to perinatal conditions are particularly high in Norman, accounting for about 40% of all neonatal readmissions.

Regional Cause-Specific Neonatal (<29 days old) Hospitalization Rates According to Maternal Regional Health Authority (RHA)

	Year Group 1989 – 1993			Year Group 1994 - 1998		
RHA	Perinatal Conditions	Health Supervision	Respiratory Infections	Perinatal Conditions	Health Supervision	Respiratory Infections
Winnipeg	351	237	192	283	209	199
per 1000 live births	7.6	5.1	4.2	6.9	5.1	4.9
Brandon	65	21	15	72	32	5
per 1000 live births	19.0	6.2	4.4	24.0	10.7	1.7
North Eastman	40	35	18	35	22	16
per 1000 live births	14.5	12.7	6.5	13.7	8.6	6.2
South Eastman	68	93	17	47	27	25
per 1000 live births	17.6	24.0	4.4	12.9	7.4	6.8
Interlake	74	89	33	58	63	23
per 1000 live births	15.5	18.7	6.9	13.2	14.3	5.2
Central	160	137	59	113	138	51
per 1000 live births	21.8	18.7	8.0	16.0	19.5	7.2
Marquette	74	224	22	47	155	16
per 1000 live births	31.9	96.5	9.5	22.4	73.9	7.6
South Westman	28	198	15	41	190	11
per 1000 live births	12.4	87.8	6.7	21.5	99.7	5.8
Parkland	81	52	46	99	43	35
per 1000 live births	27.5	17.6	15.6	37.4	16.3	13.2
Norman	83	19	22	93	17	34
per 1000 live births	33.8	7.7	9.0	40.9	7.5	14.9
Burntwood	130	33	50	127	25	60
per 1000 live births	22.2	5.6	8.5	22.8	4.5	10.8
Churchill	7	0	1	1	1	0
per 1000 live births	Unstable	Unstable	Unstable	Unstable	Unstable	Unstable
Manitoba	1161	1138	490	1016	922	475
per 1000 live births	13.8	13.5	5.8	13.3	12.1	6.2

**Note: Please refer to Appendix B for ICD-9-CM codes used in the categories of Perinatal Conditions, Health Supervision, and Respiratory Infections.*

Neonatal Hospitalizations (CCA)

Table 5.5/Figure 5.4

By one month of age, approximately 3% of Winnipeg newborns are hospitalized after discharge. This proportion has increased slightly in many Winnipeg communities over time, with most of the increase reflected in the 7-28 day old grouping. Unlike the provincial picture, there is very little geographic variation in neonatal hospitalizations.

Neonatal (< 29 days olds) Hospitalizations According to Maternal Community Characterization Area (CCA)

CCA	Year Group 1989 - 1993		Year Group 1994 - 1998	
	<7 days old	7-28 days old	<7 days old	7-28 days old
01 St. James-Assiniboia	44	42	40	44
% of live births	1.2	1.2	1.2	1.3
02 Assiniboine South	19	21	26	23
% of live births	1.0	1.1	1.6	1.4
03 Fort Garry	46	31	54	46
% of live births	1.2	0.8	1.5	1.3
04 St. Vital	63	64	57	46
% of live births	1.4	1.4	1.4	1.2
05 St. Boniface	29	42	34	32
% of live births	1.1	1.5	1.3	1.2
06 Transcona	19	47	19	29
% of live births	0.7	1.8	0.9	1.3
07 River East	50	91	59	101
% of live births	0.8	1.5	1.1	1.8
08 Seven Oaks	33	54	36	63
% of live births	1.0	1.6	1.1	1.9
09 Inkster	29	43	25	48
% of live births	1.1	1.6	1.0	2.0
10 Point Douglas	32	96	29	77
% of live births	0.8	2.4	0.9	2.3
11 Downtown	79	106	67	117
% of live births	1.2	1.6	1.1	2.0
12 River Heights	43	56	39	49
% of live births	1.1	1.5	1.2	1.5

Cause-Specific Neonatal Hospitalizations (CCA)

Table 5.6

About 30 per 1000 babies (3%) are hospitalized in Winnipeg during their first month of life. About 25% of these hospitalizations are due to perinatal conditions (e.g., disorders related to prematurity, jaundice). 18% of neonates are readmitted for health supervision concerns, and an additional 16% are readmitted for respiratory infections.

Cause-Specific Neonatal (<29 days old) Hospitalization Rates According to Maternal Community Characterization Area (CCA)

	Year Group 1989 - 1993			Year Group 1994 – 1998		
CCA	Perinatal Conditions	Health Supervision	Respiratory Infections	Perinatal Conditions	Health Supervision	Respiratory Infections
01 St. James-Assiniboia	20	24	18	19	9	16
per 1000 live births	5.5	6.6	5.0	5.8	2.7	4.8
02 Assiniboine South	16	9	4	13	10	11
per 1000 live births	8.1	4.6	2.0	7.8	6.0	6.6
03 Fort Garry	22	16	18	24	21	15
per 1000 live births	5.7	4.1	4.7	6.8	6.0	4.3
04 St. Vital	38	29	17	26	22	22
per 1000 live births	8.2	6.2	3.7	6.6	5.6	5.6
05 St. Boniface	16	13	10	29	14	3
per 1000 live births	5.8	4.7	3.6	10.9	5.2	1.1
06 Transcona	19	10	11	8	9	14
per 1000 live births	7.3	3.8	4.2	3.6	4.1	6.3
07 River East	46	28	21	31	35	27
per 1000 live births	7.4	4.5	3.4	5.7	6.4	4.9
08 Seven Oaks	24	23	12	18	23	13
per 1000 live births	7.2	6.9	3.6	5.5	7.1	4.0
09 Inkster	22	15	11	19	11	12
per 1000 live births	8.1	5.5	4.1	7.9	4.6	5.0
10 Point Douglas	43	19	20	25	15	13
per 1000 live births	10.7	4.7	5.0	7.4	4.4	3.8
11 Downtown	61	32	35	47	27	34
per 1000 live births	9.1	4.8	5.2	8.1	4.6	5.8
12 River Heights	21	20	16	21	13	19
per 1000 live births	5.5	5.3	4.2	6.4	4.0	5.8

**Note: Please refer to Appendix B for ICD-9-CM codes used in the categories of Perinatal Conditions, Health Supervision, and Respiratory Infections.*

Newborn Care - Discussion

High quality newborn care is an important contributor to perinatal health; particularly for preterm and low birth weight infants. One indicator of newborn care is the neonatal mortality rate; particularly early (i.e. 0 to 7 days) neonatal mortality rates for intermediate birth weight infants (i.e. 1500g to 2499g), and total (i.e. <29 days) neonatal mortality rates for normal birth weight infants (i.e. >2499g) (see Chapter 2, Figure 2.1). Neonatal deaths in these categories contribute approximately 15% (1.59 per 1,000) of the total provincial feto-infant mortality in pregnancies reaching at least 28 weeks gestation (see Chapter 2, Figure 2.2).

Less than 5 per 1000 newborns died within the first month of life in Manitoba, and most of these deaths occur within the first 6 days after birth. This rate has remained consistent over time, although some RHA have shown an increase in the most current 5 year time period. Winnipeg has witnessed a decrease in neonatal deaths over the last 10 years, particularly for the early neonatal period (<7 days old). Within Winnipeg, there is some geographic variation. Generally, the southern portion of the city has much lower rates compared to the downtown and North Main sections of the city.

By one month of age, approximately 5% of all newborns are readmitted to hospital. The newborn readmission rate has remained fairly stable across time for the province and for its regions. There is considerable regional variation however in neonatal hospitalizations, with Marquette and South Westman, in particular, having rates more than twice the provincial average. The rate of neonatal hospitalizations is considerably lower for Winnipeg compared to the rest of the province, with about 3% of newborns being hospitalized after discharge. There is very little geographic variation within the city with respect to neonatal readmissions.

Both for the province and for Winnipeg, the three main causes of neonatal readmission are perinatal conditions, health supervision concerns, and respiratory infections. The importance that these three causes play varies considerably by region. Readmission due to health supervision concerns accounts for more than two-thirds of all the neonatal readmissions in South Westman and Marquette, while 40% of all neonatal readmissions in Norman are due to perinatal conditions. Given that these regional variations are not seen at the city level, unlike for most other indicators, suggests that hospitalization rates may reflect, to some extent, regional health care practice differences.

CHAPTER SIX

INFANT CARE

Post-Neonatal Deaths (RHA)

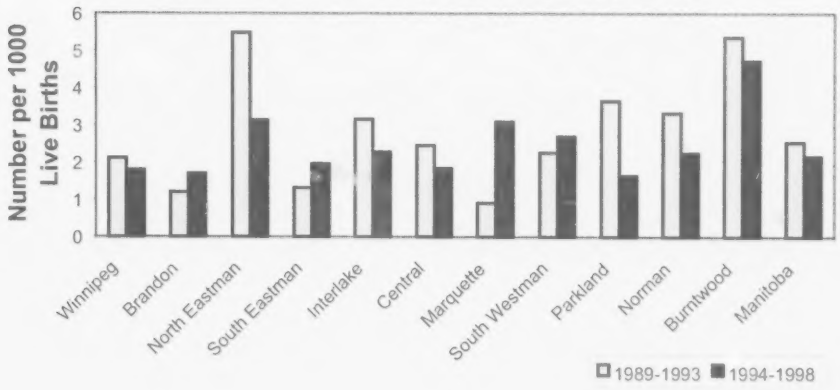
Table 6.1/Figure 6.1

About 2 per 1000 babies in Manitoba die between the 29th and the 364th day of life. The post-neonatal death rate has decreased slightly for the province as a whole and within most RHAs.

Post-Neonatal (29-364 days old) Deaths According to Maternal Regional Health Authority (RHA)

	1989 – 1993		1994 - 1998	
RHA	Number of Deaths	Deaths per 1000 Live Births	Number of Deaths	Deaths per 1000 Live Births
Winnipeg	97	2.1	73	1.8
Brandon	4	1.2	5	1.7
North Eastman	15	5.5	8	3.1
South Eastman	5	1.3	7	2.0
Interlake	15	3.2	10	2.3
Central	18	2.5	13	1.8
Marquette	2	0.9	6	3.1
South Westman	5	2.3	5	2.7
Parkland	10	3.6	4	1.6
Norman	8	3.3	5	2.2
Burntwood	31	5.4	26	4.7
Churchill	2	Unstable	0	Unstable
Manitoba	212	2.5	162	2.2

Regional Post-Neonatal (29-364 days old) Deaths



Post-Neonatal Deaths (CCA)

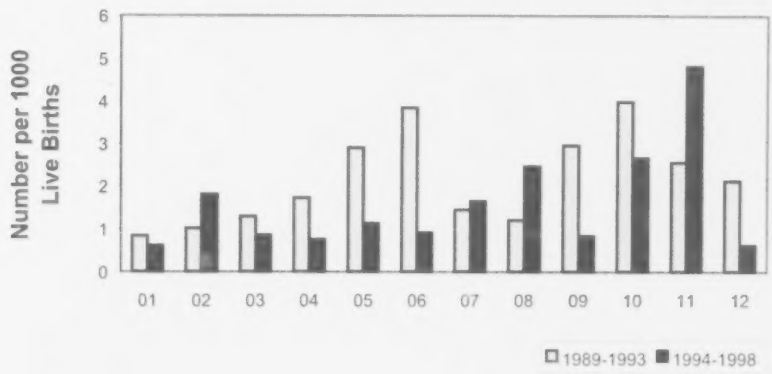
Table 6.2/Figure 6.2

In the post-neonatal period, from 29 days to 364 days after birth, about 2 per 1000 infants die in Winnipeg. Overall there has been a slight decrease over time. St. Boniface, Transcona, and Point Douglas had the highest post-neonatal death rates in the city during the 1989-1993 time period, while Downtown was about on par with the rest of the city. In the 1994-1998 time period, the post-neonatal death rates in St. Boniface, Transcona, and Point Douglas decreased considerably, while the Downtown area witnessed almost a doubling in post-neonatal deaths, making theirs the highest rate in the city.

Post-Neonatal (29-364 days) Deaths According to Maternal Community Characterization Area (CCA)

	1989 - 1993		1994 - 1998	
CCA	Number of Deaths	Deaths per 1000 Live Births	Number of Deaths	Deaths per 1000 Live Births
01 St. James-Assiniboia	3	0.8	2	0.6
02 Assinboine South	2	1.0	3	1.8
03 Fort Garry	5	1.3	3	0.9
04 St. Vital	8	1.7	3	0.8
05 St. Boniface	8	2.9	3	1.1
06 Transcona	10	3.8	2	0.9
07 River East	9	1.4	9	1.6
08 Seven Oaks	4	1.2	8	2.5
09 Inkster	8	3.0	2	0.8
10 Point Douglas	16	4.0	9	2.7
11 Downtown	17	2.5	28	4.8
12 River Heights	8	2.1	2	0.6

Post-Neonatal (29-364 days old) Deaths by Winnipeg CCA



Post-Neonatal Hospitalizations (RHA)

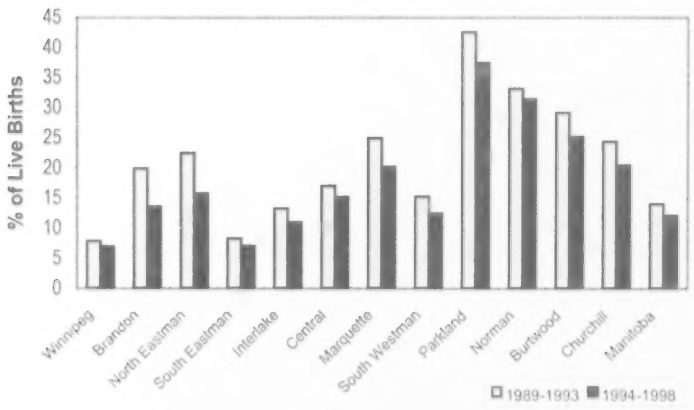
Table 6.3/Figure 6.3

Across the province, about 12% of children between 29 and 364 days of life are hospitalized. Unlike neonatal hospitalizations, the rate of post-neonatal hospitalizations has increased over time. Similar to neonatal hospitalizations, there appears to be great regional variation. Winnipeg and South Eastman have rates considerably lower than the provincial average, while Parkland, Norman, and Burntwood have post-neonatal hospitalization rates at least twice the provincial average. In these three regions about one-third of all children are hospitalized between 29 and 364 days of life. Decreases are apparent across all regions, particularly in North Eastman, Brandon, and Parkland.

Post-Neonatal (29-364 days old) Hospitalizations According to Maternal Regional Health Authority (RHA)

	1989 – 1993		1994 – 1998	
RHA	Number of Hospitalizations	% of Live Births	Number of Hospitalizations	% of Live Births
Winnipeg	3572	7.7	2786	6.8
Brandon	676	19.8	405	13.5
North Eastman	618	22.4	402	15.7
South Eastman	318	8.2	254	7.0
Interlake	629	13.2	480	10.9
Central	1244	16.9	1069	15.1
Marquette	577	24.8	421	20.1
South Westman	341	15.1	237	12.4
Parkland	1253	42.5	988	37.4
Norman	813	33.1	713	31.3
Burntwood	1703	29.1	1393	25.0
Churchill	35	24.3	23	20.4
Manitoba	11779	14.0	9171	12.0

Regional Rates of Post-Neonatal (29-364 days old) Hospitalizations



Cause-Specific Post-Neonatal Hospitalizations (RHA)

Table 6.4

About 12% of all infants in Manitoba between 29 and 364 days of life are hospitalized. Almost half of these hospitalizations are due to respiratory infections, 10% for diseases of the digestive system, and an additional 10% for convulsions, pyrexia, and other symptoms. Respiratory infections are by far the most common hospital diagnosis. Many regions have seen a substantial decrease in post-neonatal hospitalizations, and much of this decrease is seen particularly for respiratory infections (down 33% in Brandon; 29% in North Eastman) and diseases of the digestive system (down 51% in North Eastman; 38% in Marquette).

Regional Cause-Specific Post-Neonatal (29-364 days old) Hospitalization Rates
According to Maternal Regional Health Authority (RHA)

	Year Group 1989 – 1993				Year Group 1994 – 1998		
RHA	Respiratory Infections	Convulsions, Pyrexia, & Other Symptoms	Diseases of the Digestive System		Respiratory Infections	Convulsions, Pyrexia, & Other Symptoms	Diseases of the Digestive System
Winnipeg	1293	408	404		971	324	244
per 1000 live births	28.0	8.8	8.7		23.7	7.9	6.0
Brandon	334	65	83		197	40	52
per 1000 live births	97.8	19.0	24.3		65.6	13.3	17.3
North Eastman	317	82	72		208	48	33
per 1000 live births	114.9	29.7	26.1		81.1	18.7	12.9
South Eastman	139	36	38		111	30	19
per 1000 live births	35.9	9.3	9.8		30.4	8.2	5.2
Interlake	284	71	56		235	45	38
per 1000 live births	59.5	14.9	11.7		53.5	10.2	8.7
Central	582	120	163		514	111	110
per 1000 live births	79.3	16.3	22.2		72.6	15.7	15.5
Marquette	293	40	99		223	37	55
per 1000 live births	126.2	17.2	42.6		106.3	17.6	26.2
South Westman	167	32	29		119	25	17
per 1000 live births	74.1	14.2	12.9		62.4	13.1	8.9
Parkland	687	80	148		534	80	112
per 1000 live births	233.0	27.1	50.2		202.0	30.3	42.4
Norman	412	79	123		386	69	102
per 1000 live births	167.7	32.2	50.1		169.6	30.3	44.8
Burntwood	972	176	135		729	213	103
per 1000 live births	165.9	30.0	23.0		131.1	38.3	18.5
Churchill	11	5	5		7	1	4
per 1000 live births	Unstable	Unstable	Unstable		Unstable	Unstable	Unstable
Manitoba	5491	1194	1355		4234	1023	889
per 1000 live births	65.1	14.2	16.1		55.6	13.4	11.7

**Note: Please refer to Appendix B for ICD-9-CM codes used in the categories of Respiratory Infections, Convulsions, Pyrexia, and Other Symptoms, and Diseases of the Digestive System.*

Post-Neonatal Hospitalizations (CCA)

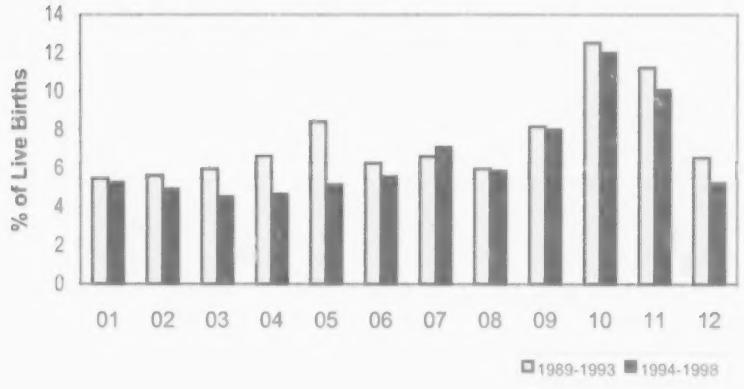
Table 6.5/Figure 6.4

Across the city, about 7% of children between 29 and 364 days of life are hospitalized, and there has been a decrease over time. Most communities within the city have post-neonatal hospitalization rates similar to that for Winnipeg as a whole, although Point Douglas and Downtown are a bit higher than the rest of the city.

Post-Neonatal (29-364 days old) Hospitalizations According to Maternal Community Characterization Area (CCA)

	1989 - 1993		1994 - 1998	
CCA	Number of Hospitalizations	% of Live Births	Number of Hospitalizations	% of Live Births
01 St. James-Assiniboia	197	5.5	174	5.3
02 Assinboine South	111	5.6	82	4.9
03 Fort Garry	230	6.0	159	4.5
04 St. Vital	308	6.6	184	4.7
05 St. Boniface	232	8.4	137	5.1
06 Transcona	163	6.3	123	5.6
07 River East	411	6.6	388	7.1
08 Seven Oaks	198	5.9	190	5.8
09 Inkster	221	8.2	193	8.0
10 Point Douglas	504	12.5	406	12.0
11 Downtown	748	11.2	587	10.1
12 River Heights	248	6.5	171	5.2

Regional Rates of Post-Neonatal (29-364 days old) Hospitalizations



Cause-Specific Post-Neonatal Hospitalization (CCA)

Table 6.6

About 7% of all post-neonates (29 – 364 days old) in Winnipeg are hospitalized. Similar to the provincial picture, most of these hospitalizations, about 35%, are due to respiratory infections, 10% for diseases of the digestive system, and an additional 11% for convulsions, pyrexia, and other symptoms. Most communities within the city have seen a decrease in post-neonatal hospitalizations, and much of this decrease is accounted for by decreases in hospitalizations for respiratory infections (down 53% in St. Boniface).

Cause-Specific Post-Neonatal (29-364 days old) Hospitalization Rates According to Maternal Community Characterization Area (CCA)

	Year Group 1989 - 1993			Year Group 1994 - 1998		
CCA	Respiratory Infections	Convulsions, Pyrexia, & Other Symptoms	Diseases of the Digestive System	Respiratory Infections	Convulsions, Pyrexia, & Other Symptoms	Diseases of the Digestive System
01 St. James -Assiniboine	64	25	24	45	25	23
per 1000 live births	17.7	6.6	6.9	13.6	7.0	7.6
02 Assiniboine South	33	15	12	25	10	7
per 1000 live births	16.7	6.1	7.6	15.0	4.2	6.0
03 Fort Garry	79	27	23	50	13	19
per 1000 live births	20.5	6.0	7.0	14.2	5.4	3.7
04 St. Vital	92	41	45	63	21	25
per 1000 live births	19.8	9.7	8.8	15.9	6.3	5.3
05 St. Boniface	82	23	34	37	16	12
per 1000 live births	29.7	12.3	8.3	13.9	4.5	6.0
06 Transcona	47	19	25	31	22	5
per 1000 live births	18.0	9.6	7.3	14.0	2.3	10.0
07 River East	135	63	54	129	54	33
per 1000 live births	21.7	8.7	10.1	23.6	6.0	9.9
08 Seven Oaks	62	21	25	60	18	18
per 1000 live births	18.6	7.5	6.3	18.5	5.5	5.5
09 Inkster	86	23	19	73	20	13
per 1000 live births	31.7	7.0	8.5	30.3	5.4	8.3
10 Point Douglas	210	53	48	178	40	30
per 1000 live births	52.2	11.9	13.2	52.6	8.9	11.8
11 Downtown	314	76	61	235	65	43
per 1000 live births	47.1	9.1	11.4	40.3	7.4	11.1
12 River Heights	88	22	29	55	21	15
per 1000 live births	23.2	7.7	5.8	16.9	4.6	6.4

**Note: Please refer to Appendix B for ICD-9-CM codes used in the categories of Respiratory Infections, Convulsions, Pyrexia, and Other Symptoms, and Diseases of the Digestive System.*

Breastfeeding (RHA)

Table 6.7/Figure 6.5

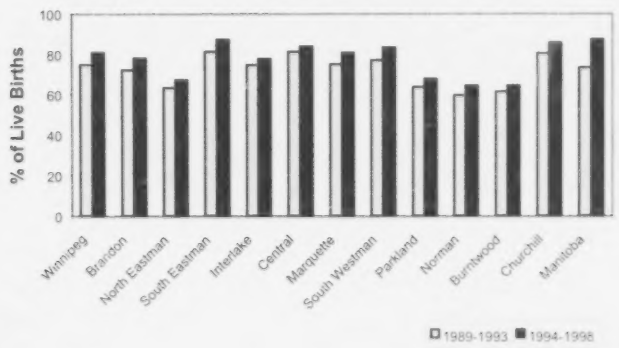
About three-quarters of women who deliver in hospital initiate breastfeeding (either breast only or breast and bottle) while in hospital, and this proportion has been increasing over time and across all regions. Regional differences are apparent however, with women residing in North Eastman, Parkland, Norman, and Burntwood in particular showing considerably lower rates than the provincial average. As breastfeeding initiation is an important piece of data to capture, it is worth noting that some RHAs have upwards of 10% missing breastfeeding data.

Regional Rates of Women Who Initiate Breastfeeding in Hospital According to Maternal Regional Health Authority (RHA)

	1989 – 1993		1994 - 1998		1989-1998
RHA	# of Women Breastfeeding	Rate per 100 Live Births*	# of Women Breastfeeding	Rate per 100 Live Births*	Percent of Missing Breastfeeding Data
Winnipeg	34141	74.7	32608	80.7	0.5
Brandon	2425	72.1	2300	77.9	0.4
North Eastman	1670	63.3	1597	67.2	5.2
South Eastman	3082	81.2	3104	87.2	0.9
Interlake	3026	74.6	2895	77.6	15.0
Central	5867	81.1	5841	83.7	1.3
Marquette	1476	74.9	1364	80.6	11.8
South Westman	1384	76.9	1426	83.2	13.6
Parkland	1725	63.7	1629	67.5	1.1
Norman	1425	59.5	1413	64.2	1.1
Burntwood	3530	61.4	3500	64.3	0.8
Churchill	114	80.3	95	85.6	1.6
Manitoba	59865	73.4	57772	78.5	2.3

*** Missing data is removed from the number of live births used in the rate calculation.**

Regional Breastfeeding Initiation Rates



Breastfeeding (CCA)

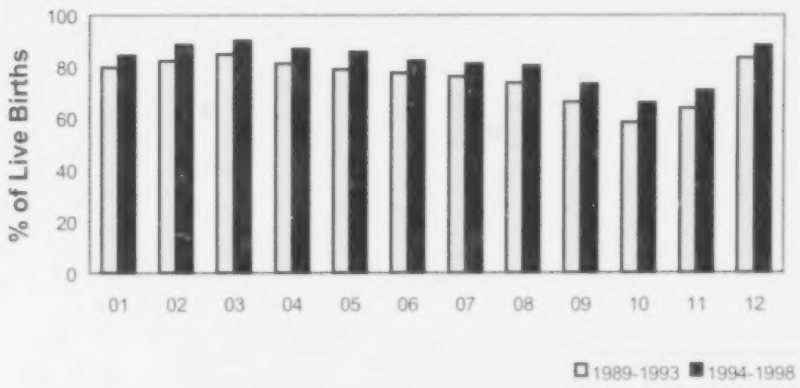
Table 6.8/Figure 6.6

During the 1994-1998 time period, about 80% of Winnipeg women who delivered in hospital initiated breastfeeding while in hospital. While many areas of the city have accomplished this rate, there are clear discrepancies in the breastfeeding rate. Women residing in the Point Douglas, Inkster, and Downtown CCA in particular have considerably lower breastfeeding initiation rates than the rest of the city.

Rates of Winnipeg Women Who Initiate Breastfeeding in Hospital According to Maternal Community Characterization Area (CCA)

CCA	1989-1993 Number of Women Breastfeeding	1989-1993 Breastfeeding Rate per 100 Live Births	1994-1998 Number of Women Breastfeeding	1994-1998 Breastfeeding Rate per 100 Live Births
01 St. James-Assiniboia	2860	79.8	2765	84.2
02 Assiniboine South	1613	82.2	1450	88.4
03 Fort Garry	3225	84.7	3113	90.0
04 St. Vital	3744	81.1	3398	86.8
05 St. Boniface	2170	78.8	2264	85.6
06 Transcona	2007	77.6	1806	82.2
07 River East	4707	76.1	4400	80.9
08 Seven Oaks	2436	73.6	2587	80.2
09 Inkster	1774	66.2	1747	73.1
10 Point Douglas	2322	58.3	2205	65.9
11 Downtown	4203	63.8	4067	70.7
12 River Heights	3132	83.4	2844	88.1

Breastfeeding Initiation Rates by Winnipeg CCA



Breastfeeding (NRN)

Table 6.9

Most neighbourhoods within Winnipeg are maintaining rates of breastfeeding initiation in hospital of around 80%, and all NRN have shown an increase during the most recent time period. Of special note are Downtown B, Point Douglas B, and Inkster B, all of whom have shown increases upwards of 10%.

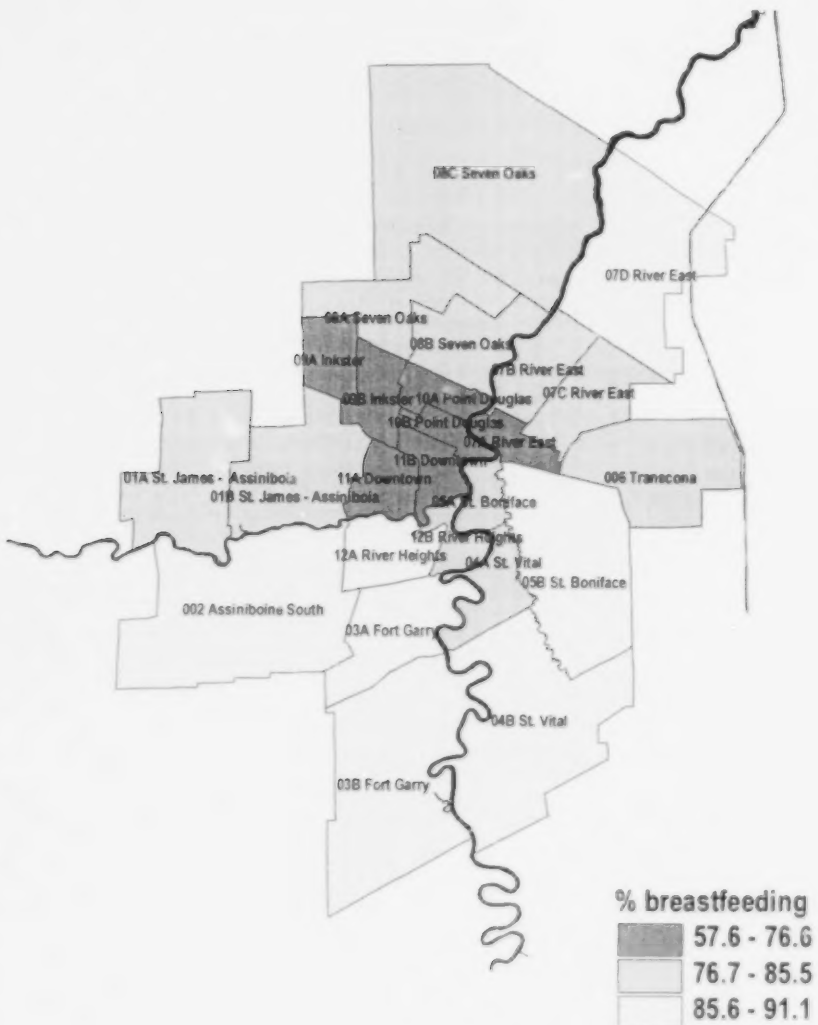
Rates of Winnipeg Women Who Initiate Breastfeeding in Hospital According to Maternal Neigbourhood Resource Network (NRN)

NRN	1989-1993		1994-1998	
	Number of Women Breastfeeding	Breastfeeding Rate per 100 Live Births	Number of Women Breastfeeding	Breastfeeding Rate per 100 Live Births
002 Assiniboine South	1613	82.2	1450	88.4
006 Transcona	2007	77.6	1806	82.1
01A St. James-Assiniboia	1415	78.8	1315	83.8
01B St. James-Assiniboia	1445	80.8	1450	84.5
03A Fort Garry	1307	86.8	1282	91.1
03B Fort Garry	1918	83.4	1831	89.2
04A St. Vital	1552	78.2	1513	84.9
04B St. Vital	2192	83.4	1885	88.4
05A St. Boniface	811	77.2	811	83.4
05B St. Boniface	1359	79.7	1453	86.9
07A River East	1172	69.4	1112	76.6
07B River East	1849	81.4	1649	83.8
07C River East	1526	75.0	1464	80.5
07D River East	160	83.3	175	88.4
08A Seven Oaks	969	70.4	972	78.8
08B Seven Oaks	1408	75.7	1497	80.7
08C Seven Oaks	59	79.7	118	85.5
09A Inkster	1051	72.5	991	76.5
09B Inkster	723	58.7	759	69.1
10A Point Douglas	1500	65.1	1454	71.3
10B Point Douglas	822	48.8	751	57.6
11A Downtown	2316	69.8	2251	74.7
11B Downtown	1887	57.7	1816	66.4
12A River Heights	1953	86.7	1828	90.9
12B River Heights	1179	78.6	1016	83.6

Breastfeeding per 100 Live Births

Figure 6.7

Percent of Winnipeg Women Initiating Breastfeeding in Hospital, 1994-1998



Infant Care - Discussion

One global indicator of Infant Care is the post-neonatal infant mortality rate. From 1989-1998, post-neonatal mortality accounted for approximately 24% of the overall feto-infant mortality for pregnancies that achieved 28 weeks gestation (see Chapter 2, Figure 2.2). There are noteworthy regional variations in post-neonatal mortality rates. In North Eastman, Burntwood, and the Interlake RHAs, 75%, 56%, and 46%, respectively, of their excess feto-infant mortality is in the area of Infant Care. Data obtained from Vital Statistics suggests that the top three causes of infant mortality (deaths between 29 and 364 days old) for Manitoba are sudden infant death syndrome (SIDS), congenital anomalies, and injuries. While these conditions are multi-factorial in origin, they have known modifiable risk factors. Therefore, investigation into their causes and more intensive promotion of known preventive practices (e.g., non-prone sleeping position, decrease smoke exposure in home, folic acid supplementation during pregnancy) is warranted. In addition, underlying determinants of these outcomes such as low socio-economic status, nutritional status and environmental conditions should be addressed.

Hospitalization rates for infants have declined in the past several years, with much of the decrease seen for respiratory infections and diseases of the digestive system. There are large geographic variations in Manitoba with respect to post-neonatal hospitalization rates, with higher rates in the northern rural regions. While the post-neonatal hospitalization rate is about 12% for the province, only about 7% of children between 29 and 364 days of life are hospitalized in Winnipeg, with only slightly higher rates in the Downtown and Point Douglas areas of the city.

About 75% of new mothers initiate breastfeeding in hospital in Manitoba, and the rate of breastfeeding initiation in hospital has risen slowly in the past decade in Manitoba. There is considerable regional discrepancy in the breastfeeding initiation rate, with approximately 65% of new mothers living in the northern regions of the province initiating breastfeeding in hospital. The in-hospital breastfeeding initiation rate within the city of Winnipeg is better than 80%, although the Downtown and Point Douglas communities have much lower rates. As breastfeeding promotes the health of infants in many ways, strategies to increase breastfeeding rates, particularly in the northern regions of the province and the inner city of Winnipeg, need to be enhanced. Some RHAs have less complete breastfeeding data, so their rates are difficult to interpret.

APPENDICES

Glossary

Appendix A

Abortion *– the complete expulsion or extraction from its mother of a fetus or embryo of less than 20 weeks gestation, whether there is evidence of life or not. This usually corresponds with a weight of less than 500 grams:*

- *spontaneous abortion (miscarriage) – the complete expulsion of a fetus or embryo from its mother that occurred without medical inducement.*
- *induced abortion - the complete expulsion of a fetus or embryo from its mother that was medically induced.*

Analgesia/Anaesthesia *– the absence of normal sensation, especially sensitivity to pain, as induced by an anaesthetic substance.*

- *general anaesthesia – an anaesthetic agent given primarily by inhalation or intravenous injection*
- *epidural/spinal – an epidural is the process of achieving regional anaesthesia of the pelvic, abdominal, genital, or other area by the injection of a local anaesthetic into the epidural space of the spinal column. A spinal is the injection of a local anaesthetic into the spinal column.*
- *pudendal block – a procedure whereby the pudendal nerves are anaesthetized by the injection of a local anaesthetic in the trunk of each nerve as it passes over the sacrospinous ligament, just below the ischial spine.*

Birth *– the delivery of a fetus, either live or stillbirth:*

- *live birth – the birth of a fetus who, after birth, breathes or shows any other evidence of life, such as the beating of the heart, pulsation of the umbilical cord or definite movement of the voluntary muscles.*
- *stillbirth - the birth of a fetus weighing 500 grams or more or having a gestational age of 20 weeks or more, who shows no signs of life after birth. A late stillbirth refers to the birth of a fetus having a gestational age of 34 weeks or greater who shows no signs of life after birth.*
- *total births - all live births and stillbirths.*

Birth Weight *– the weight of a fetus (live or stillbirth) recorded after its birth in grams:*

- *very low birth weight – deliveries weighing less than 1500 grams (<3.3 lbs.) at birth.*
- *low birth weight – deliveries weighing less than 2500 grams (<5.5 lbs.) at birth.*
- *high birth weight – deliveries weighing greater than 3999 grams (>8.8 lbs.) at birth.*

Caesarean Section *– the delivery of an infant by surgical incision of the abdominal wall.*

Ectopic Pregnancy *– an abnormal pregnancy in which the products of conception implant outside of the uterus.*

Epidural/Spinal Anaesthesia/Analgesia *– an epidural is the process of achieving regional anaesthesia of the pelvic, abdominal, genital, or other area by the injection of a local anaesthetic into the epidural space of the spinal column for the purpose of pain reduction/elimination. A spinal is the injection of a local anaesthetic into the spinal column for the purpose of pain reduction/elimination.*

Glossary

Appendix A

Feto-Infant Mortality *– the number of deaths for infants, live and stillbirth, from delivery through the first year of life:*

- *stillbirth rate – the proportion of births weighing 500 grams or more or having a gestational age of 20 weeks or more, that show no signs of life after birth.*

  $$\frac{\text{total number of stillbirths (>= 500g or >= 20 weeks gestation)}}{\text{total number of births (live and stillbirth)}} \times 1000$$

- *infant mortality rate – the proportion of live born infants who die within 364 full days after birth.*

  $$\frac{\text{total number of infant deaths (<365 days old)}}{\text{total number of live births}} \times 1000$$

- *neonatal mortality rate – the proportion of live born infants who die prior to 29 full days of life. An early neonatal death is a death occurring prior to the 7th full day of life. A late neonatal death is a death occurring between the 8th and the 28th full day of life.*

  $$\frac{\text{total number of neonatal deaths (<29 days old)}}{\text{total number of live births}} \times 1000$$

- *post-neonatal mortality rate – the proportion of live born infants who die between the 29th and the 364th full day of life.*

  $$\frac{\text{total number of post-neonatal deaths (29 – 364 days old)}}{\text{total number of live births}} \times 1000$$

General Anaesthesia *– an anaesthetic agent given primarily by inhalation or intravenous injection for the purpose of pain reduction/elimination.*

Gestational Age *– the duration of gestation measured from the first day of the last normal menstrual period. Gestational age is expressed in completed weeks. If the date of the last menstrual period is uncertain or unknown, an age estimate based on the ultrasound will be recorded as the gestational age:*

- *preterm – births that occurred before the 37th completed week of gestation.*
- *term – births that occurred between 37 and 41 weeks of gestation.*
- *post-date – births that occurred after the 41st completed week of gestation.*

High Birth Weight *– delivery of an infant weighing greater than 3999 grams (>8.8 lbs.) at birth.*

High Birth Weight Rate* *- the proportion of live born infants weigning greater than 3999 grams (>8.8 lbs.) at birth.*

$$\frac{\text{total number of preterm live births (<37 weeks gestation)}}{\text{total number of live births}} \times 1000$$

Hospitalizations *– an inpatient service performed in hospital, excluding all day surgeries.*

Indicated Labour *– a medically induced delivery because of either a maternal or fetal adverse condition.*

Induced Abortion *- the complete expulsion of a fetus or embryo, prior to the 20th week of gestation, from its mother that was medically induced.*

Induction of Labour *– medical induction of labour undertaken using an oxytocic agent, such as oxytocin and prostaglandin. Inductions using only artificial rupture of membranes are not included.*

Infant Mortality Rate* *– the proportion of live born infants who die within 364 full days after birth.*

$$\frac{\text{total number of infant deaths (<365 days old)}}{\text{total number of live births}} \times 1000$$

Glossary

Appendix A

Labour *– the time and processes that occur during parturition from the beginning of cervical dilation to the delivery of the placenta:*

- *indicated labour - medically induced delivery because of either a maternal or fetal adverse condition.*
- *induction of labour – inductions undertaken using an oxytocic agent, such as oxytocin and prostaglandin. Inductions using only artificial rupture of membranes are not included.*
- *spontaneous labour - delivery preceded by spontaneous labour or rupture of membranes without induction or elective caesarean section for maternal or fetal reasons.*

Live Birth *– the birth of a fetus who, after birth, breathes or shows any other evidence of life, such as the beating of the heart, pulsation of the umbilical cord or definite movement of the voluntary muscles.*

Low Birth Weight *– delivery of an infant weighing less than 2500 grams (<5.5 lbs.) at birth.*

Low Birth Weight Rate* *- the proportion of live born infants weighing less than 2500 grams (<5.5 lbs.) at birth.*

$$\frac{\text{total number of preterm live births (<37 weeks gestation)}}{\text{total number of live births}} \times 1000$$

Molar Pregnancy *– a pregnancy in which a hydatid mole develops from the trophoblastic tissue of the early embryonic stage of development.*

Neonatal Mortality Rate* *– the proportion of live born infants who die prior to 29 full days of life. An early neonatal death is a death occurring prior to the 7th full day of life. A late neonatal death is a death occurring between the 8th and the 28th full day of life.*

$$\frac{\text{total number of neonatal deaths (<29 days old)}}{\text{total number of live births}} \times 1000$$

Neonate *- an infant who is less than 29 days old. The data in the Newborn Care section reflects the health outcomes of these neonates.*

Operative Delivery *– refers to caesarean sections and operative vaginal deliveries. Operative vaginal deliveries are those in which forceps or vacuum extractor were used.*

Post-Neonate *- an infant who is 29 days old or older but is less than 1 year old (i.e., 29-364 days old). The health outcomes of infants in the post-neonatal age group are reflected in the Infant Care section of this report.*

Post-Neonatal Mortality Rate* *– the proportion of live born infants who die between the 29th and the 364th full day of life.*

$$\frac{\text{total number of post-neonatal deaths (29 – 364 days old)}}{\text{total number of live births}} \times 1000$$

Preterm *– refers to the gestational age of an infant born prior to the 37th completed week of gestation.*

Preterm Birth Rate* *– the proportion of live births infants that are born prior to the 37th completed week of gestation.*

$$\frac{\text{total number of preterm live born infants (<37 weeks gestation)}}{\text{total number of live births}} \times 100$$

Pudendal Block *– a procedure whereby the pudendal nerves are anaesthetized by the injection of a local anaesthetic in the trunk of each nerve as it passes over the sacrospinous ligament, just below the ischial spine for the purpose of pain reduction/elimination.*

Glossary

Appendix A

Spontaneous Abortion (Miscarriage) *– the complete expulsion of a fetus or embryo, prior to the 20th week of gestation, from its mother that occurred without medical involvement.*

Spontaneous Labour *- delivery preceded by the rupture of membranes without induction or elective caesarean section for maternal or fetal reasons.*

Stillbirth *- the birth of a fetus weighing 500 grams or more or having a gestational age of 20 weeks or more, who shows no signs of life after birth. A late stillbirth refers to the birth of a fetus having a gestational age of 34 weeks or greater who shows no signs of life after birth.*

Stillbirth Rate* *– the proportion of births weighing 500 grams or more or having a gestational age of 20 weeks or more, that show no signs of life after birth.*

$$\frac{\text{total number of stillbirths (>= 500g or >= 20 weeks gestation)}}{\text{total number of births (live and stillbirth)}} \times 1000$$

Term *– refers to the birth of an infant that occurred between 37 and 41 weeks of gestation.*

Teen Pregnancy *– a pregnancy resulting in a hospital-based outcome occurring to a woman between the ages of 12 and 19 years.*

Teen Pregnancy Rate* *– proportion of women between the ages of 15 and 19 years having a hospital-based pregnancy outcome (note - <15 year olds are not included in the overall teen pregnancy rate)*

$$\frac{\text{15-19 year olds with a hospital-based pregnancy outcome}}{\text{all 15-19 year old females}} \times 100$$

Total Births *- all live births and stillbirths.*

****Note – all rates reported in this report are annualized over 5 years, that is, they represent a 5-year average.***

ICD-9-CM Classification and Procedure Codes

Appendix B

Introduction

Congenital Anomalies – 740.xx – 759.xx

- *e.g., spina bifida, anomalies of the eyes and ears, bulbus cordis anomalies and other anomalies of the heart and circulatory system, anomalies of the respiratory system, cleft palate and lip and other anomalies of the digestive system, anomalies of the genital organs, anomalies of the urinary system, and musculoskeletal deformities*

Sudden Infant Death Syndrome and Other Unknown Causes – 798.xx – 799.xx

- *e.g., SIDS, asphyxia, respiratory arrest, and other ill-defined conditions*

Respiratory Infections – 460.xx – 519.xx, 078.xx

- *e.g., common cold, sinusitis, bronchitis, chronic disease of tonsils and adenoids, pneumonia, influenza, and asthma*

Injuries, Poisoning, and Toxic Effects – 910.xx – 913.xx, 967.xx – 983.xx

Respiratory Conditions of Newborn – 769.xx – 770.xx

- *e.g., respiratory distress syndrome, other respiratory conditions of fetus and newborn*

Maternal Health

Molar Pregnancy – 630.xx

Ectopic Pregnancy – 633.0x – 633.9x,

Stillbirth – V271, V274, V277

Live Birth – 650.xx – 651.93, V270, V272 V273

Spontaneous Abortion – 631.xx, 632.xx, 634.00 – 634.92, 637.00 – 637.92

Induced Abortion – 635.00 – 636.92, 638.0x – 638.9x

Indicated Labour – 642.xx, 652.xx, c-section indicator, ICD-9-CM procedure codes 73.0x, 73.1x, 73.4x

Spontaneous Labour – all non-indicated labour, by default

Maternal Care

Low Forceps – ICD-9-CM procedure codes 72.0x – 72.1x

Mid Forceps – ICD-9-CM procedure codes 72.21 – 72.29

Vacuum Extraction – ICD-9-CM procedure codes 72.71 – 72.79

Medical Induction of Labour - ICD-9-CM procedure codes 73.4x

Newborn Care

Conditions Originating in the Perinatal Period – 760.xx – 769.xx, 771.xx – 779.xx

- *e.g., maternal infections or disorders, fetal alcohol syndrome, maternal complications of pregnancy, complications of placenta, cord, or membranes, complications of labour and delivery, slow fetal growth and fetal malnutrition, disorders related to short or long gestation, disorders related to low or high birthweights, birth trauma intrauterine hypoxia and birth asphyxia, fetal distress, and perinatal jaundice*

Health Supervision of Infant or Child – V20.x

- *e.g., medical or nursing care supervision of healthy infant in cases of maternal illness, socioeconomic adverse condition at home, or too many children at home interfering with normal care, and developmental testing of infant*

Respiratory Infections – 460.xx – 519.xx, 770.xx, 078.xx

- *e.g., common cold, sinusitis, bronchitis, chronic disease of tonsils and adenoids, pneumonia, influenza, and asthma*

Infant Care

Respiratory Infections – 460.xx – 519.xx, 078.xx

- *e.g., common cold, sinusitis, bronchitis, chronic disease of tonsils and adenoids, pneumonia, influenza, and asthma*

Diseases of the Digestive System – 520.xx – 579.xx

- *e.g., disorders of tooth development and eruption, diseases of the jaws, diseases of the salivary glands, ulcers, disorders of stomach and duodenum, appendicitis, hernia, enteritis and colitis, and noninfectious gastroenteritis*

Convulsions, Pyrexia, and Other Symptoms – 780.xx – 799.xx

- *e.g., general symptoms, sleep disturbances, pyrexia, convulsions, abnormal weight gain or weight loss, and failure to thrive*

Note[1]: ICD-9-CM diagnoses are 5 digit codes. The fourth and fifth digits are used for more refined diagnosis and were often not needed for the classifications used in this report. These digits have thus been identified only by an 'x'. Similarly, ICD-9-CM procedure codes are 4 digits, where the fourth digit is used for refinement purposes. This digit is also identified by an 'x'.

Note[2]: Some diagnoses and procedures are already coded on the hospital discharge form as separately identified fields. For these diagnoses and procedures the ICD-9-CM classification scheme was not needed. These include:

- *type of delivery – vaginal, scheduled caesarean section, or non-scheduled caesarean section*
- *analgesia/anaesthesia usage – general anaesthesia, epidural/spinal, or pudendal block*
- *method of newborn feeding – breastfeeding, bottle feeding, or breast and bottle feeding*

Data Sources

Appendix C

The data for this Perinatal Surveillance Report came from a number of sources. The bulk of the data was obtained by linking obstetrical hospital records and newborn hospital records dated April 1, 1984 to March 31, 1999. The Manitoba Health Hospital records were searched for obstetrical (mother) or newborn admissions. The obstetrical and newborn records were linked together by hospital of admission, mother's hospital record number, newborn's hospital record number, Manitoba Health Family Registration number and surname. Extensive verification of the linkage was conducted in the cases where mother's surname was not the same as the newborn's surname. Most data lines contain both mother and newborn information. Those mother records that did not link to a newborn record were retained only if one of the mother's diagnoses included a stillborn v-code (V271, V274, V277) assuming that a newborn record was not created for these births. All newborn records were retained because a newborn record represented a birth regardless if a link could be made with a maternal record. Manitoba Health Medical Coverage data was merged with the linked records by newborn's personal health identification number (PHIN) to add cancel codes and dates to this Database. Analysis of this database is restricted to those newborns whose mother had a valid Manitoba PHIN, who currently resided in Manitoba, and who gave birth in Manitoba. Additionally, only newborns with a recorded birth weight of 500 grams or greater or a gestational age of 20 weeks or greater were included in the analysis.

The linked obstetrical-newborn database only identifies pregnancies that resulted in a live birth or a stillbirth. To capture pregnancies which did not result in a birth, the Manitoba Health Hospital records were again searched, and all obstetrical admissions regardless of outcome were summarized into a pregnancy database. Using this pregnancy database it was possible to calculate rates of reported ectopic pregnancies, molar pregnancies, spontaneous abortions (miscarriages), and induced abortions, in addition to stillbirths and live births. Only pregnancies that resulted in a hospital-based outcome are captured in this database. Therefore, pregnancies resulting in a home birth, an induced abortion at a private clinic, or an unreported spontaneous abortion are not captured in this database. Analysis of this database is restricted to women with a valid Manitoba PHIN, who currently resided in Manitoba, and who had a pregnancy outcome in a Manitoba hospital.

Since the hospital admission records do not identify cause of death, the Vital Statistics "Deaths" dataset was utilized to calculate the cause-specific rates of post-neonatal deaths according to diagnosis. This dataset does not contain PHINs, therefore it was not linked to the obstetrical-newborn database. Province of death is the only criterion for inclusion in the data received from Vital Statistics. Therefore, if an infant whose mother was not a Manitoba resident died in Manitoba, she or he was included in the provincial rates for death by diagnosis.

Finally, to ascertain information on maternal smoking during pregnancy, data gathered from the Post-Partum Referral forms for 1997 and 1998 were used. The Post-Partum referral forms (PPRF) are nurse-to-nurse referrals from a hospital nurse to a public health nurse in the mother's community. Data for 1997 and 1998 only have currently been entered into a Microsoft Access database by the Community Health Assessment Unit of Manitoba Health. Because of the geography-specific nature of this report, only PPRF data containing a valid 6-digit postal code was included in the analysis.

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